



DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

8 March 1982

NCBCO-S

RE: Final Programmatic Environmental Impact Statement
entitled "U.S. Lake Erie Natural Gas Resource Development"

TO WHOM IT MAY CONCERN:

Enclosed for review and comment is the final Programmatic Environmental Impact Statement (EIS) related to natural gas resource development in the eastern and central basins of Lake Erie bordering the States of New York, Ohio, and Pennsylvania. The final EIS has been prepared by the U.S. Army Engineer District, Buffalo, and the U.S. Environmental Protection Agency, Region V, Great Lakes National Program Office.

The Final EIS is in abbreviated form and consists of a new summary, a new cover sheet, a public involvement section, a list of errata to the Draft EIS, and a comment-response section. The comment-response section consists of a verbatim reprint of comments received on the Draft EIS and the Corps of Engineers' and Great Lakes National Program Office's response to the comments. The responses are printed along side of the verbatim letters of comment.

The Draft EIS which was filed with the U.S. Environmental Protection Agency Headquarters on 21 November 1980 is incorporated into the Final EIS by reference. Recipients of the Draft EIS were advised to maintain their copies because of the possibility of using an abbreviated format for the Final EIS. However, a limited number of Draft Environmental Impact Statements have been reprinted and may be requested in writing from the Buffalo Districts' Regulatory Functions Branch at the above address. Additionally, copies of the Draft EIS are available for review at libraries located along the Lake Erie shoreline. A list of libraries being used for review purposes is attached to our notice of availability.


NCBCO-S

RE: Final Programmatic Environmental Impact Statement
entitled "U.S. Lake Erie Natural Gas Resource Development"

Any comments you wish to make on the Final EIS will be considered in making the decision on whether or not U.S. Lake Erie natural gas resource development can be accomplished in an environmentally acceptable manner, in principle, provided they are received before the termination of the review period which is 19 Apr. 1982. This Final EIS, in itself, is not the decision making document. A decision will not be made until after the thirty day review period for the Final EIS is completed.

Comments should be addressed to me at the above address, Attention: Regulatory Functions Branch.

Sincerely,


GEORGE P. JOHNSON,
Colonel, Corps of Engineers
District Engineer



NCBCO-S

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

8 March 1982

NOTICE OF AVAILABILITY
FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT:
U.S. LAKE ERIE NATURAL GAS RESOURCE DEVELOPMENT

PREPARED BY THE U.S. ARMY ENGINEER DISTRICT, BUFFALO
AND THE GREAT LAKES NATIONAL PROGRAM OFFICE,
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V.

TO WHOM IT MAY CONCERN:

Notice is hereby given that the Final Programmatic Environmental Impact Statement (Final EIS) entitled "U.S. Lake Erie Natural Gas Resource Development" is now available for public review and comment. This report is prepared pursuant to Section 10 of the River and Harbor Act of 1899 and Sections 402 and 404 of the Clean Water Act and in accordance with the requirements set forth in the National Environmental Policy Act of 1969, Council on Environmental Quality regulations governing the preparation of Environmental Impact Statements (Code of Federal Regulations, Title 40, Chapter V, parts 1500 to 1508), and pertinent Corps of Engineers and U.S. Environmental Protection Agency regulations.

The Final EIS is in abbreviated form and consists of two volumes. Volume One is the Draft Programmatic EIS which was filed with U.S. Environmental Protection Agency, Headquarters on 21 November 1980. Volume Two consists of: a summary of environmental impacts; a list of errata; a brief public involvement section; and a section consisting of a reprint of comments received on the Draft Programmatic EIS and the Corps of Engineers-U.S. Environmental Protection Agency responses to the comments.

The Final EIS addresses the environmental consequences of natural gas resource development in the Eastern and Central Basins of U.S. Lake Erie offshore of New York, Pennsylvania, and Ohio under a certain set of constraints and technologies. Development of oil resources in Lake Erie is not considered in this study nor is any drilling in the Western Basin of the Lake due to the high possibility of encountering oil in this area and the recommended prohibition on drilling in the area by the International Joint Commission.

In order to develop U.S. Lake Erie natural gas resources, Federal permits for various gas development activities will be required under Section 10 of the River and Harbor Act of 1899 and Sections 402 and 404 of the Clean Water Act.

In anticipation of applications for Federal permits and to avoid delays, if it is determined that permits can be issued, both the Corps of Engineers and the U.S. Environmental Protection Agency have engaged in a joint study to determine if development can be accomplished in an environmentally acceptable manner, in principle, and to examine alternatives and mitigation measures.

The Final EIS was developed without the benefit of a project advocate (applicant) and it was therefore necessary to construct a realistic program detailing engineering design, activity timing, administrative structure and constraints in order to assess environmental impacts of gas development activities in the Lake. The program developed for the EIS is called the "Reference Program". Reference program technologies include protective measures and techniques presently available to reduce the release to the environment of materials used and residuals generated during gas development activities.

The Final EIS does not make any decision or judgement as to whether or not Federal permits related to certain gas development activities should be issued or denied. Rather, it will be used in the overall public interest review to assist the Corps of Engineers and the U.S. Environmental Protection Agency in determining whether or not U.S. Lake Erie Natural gas resource development is acceptable in principle. Therefore, this Final EIS does not make a judgement but instead sets forth the environmental effects associated with the reference program. It also addresses various guidelines which would represent minimum environmental standards acceptable to the Federal government, if gas development is ultimately found to be acceptable in principle.

A notice of intent to prepare a Draft EIS was published in the 30 July 1979 Federal Register. Scoping meetings for the Draft EIS were held on August 15, 1977, October 3, 1977, August 21, 1978, and December 14, 1978. To gain input from the general public and inform them of the gas resource development study, public hearings were held as follows: Toledo, Ohio on October 16, 1979; Cleveland, Ohio on October 23, 1979; Erie, Pennsylvania on October 30, 1979; and Buffalo, New York on November 1, 1979. Information related to gas development activities and their potential environmental effects was made available to the public prior to the public hearings. The Draft Programmatic EIS and Notices of Availability were mailed to the U.S. Environmental Protection Agency, the general public, news media, libraries, government officials, and Federal, state, and local agencies during the week of 10 to 14 November 1980. Notice of Availability was published in the Federal Register on 21 November 1980. The Draft EIS was circulated for review and comment until 12 January 1981. A public information meeting on the Draft EIS was held in Buffalo, New York on 11 February 1981 to obtain any pertinent new information that might be available and to offer the public an opportunity to make statements and ask questions about natural gas resource development. Comments received on the Draft EIS and pertinent issues raised at the public information meeting have been considered in the Final EIS.

To encourage full public involvement in this review process, copies of the Final Programmatic EIS have been placed in information centers along the Lake Erie Shoreline. These same information centers were sent copies of the Draft Programmatic EIS and various technical reports and were requested to maintain

these documents for public use until a decision is ultimately made on the acceptability of gas resource development in U.S. Lake Erie. A list of these information centers is attached.


Anyone desiring to comment on the Final Programmatic EIS should forward their views in writing to the District Engineer, U.S. Army Engineer District, Buffalo, 1776 Niagara Street, Buffalo, New York 14207, Attention: Regulatory Functions Branch. All comments should be forwarded to the Corps no later than 19 April 1982. Comments on the Final Programmatic EIS should be as specific as possible.

All comments received on the Final EIS prior to the deadline date will be evaluated and considered in arriving at a final decision on whether or not natural gas resource development in U.S. Lake Erie can be accomplished in an environmentally acceptable manner, in principle.

Copies of the Final Programmatic Environmental Impact Statement have been forwarded to those governmental agencies, public interest groups, environmental organizations, and concerned individuals or industries that furnished comment on the Draft EIS. Others interested in obtaining a copy of the Final EIS for review purposes should contact Mr. Arthur K. Marks by calling A/C 716, 876-5454, extension 2329, or writing in care of the address shown on this notice.

Since the possibility of an abbreviated Final EIS was being considered, all interested parties that were sent a copy of the Draft Programmatic EIS by the Corps of Engineers were advised to retain the copy for future reference if they anticipated reviewing and commenting on the Final EIS. If you already have a copy of the Draft Programmatic EIS, which is Volume One of the Final EIS, please specify that you require only Volume Two when making your request for a copy of the Final EIS. We have reprinted a limited number of Draft Programmatic Environmental Impact Statements and will make them available on request during the review period. The Draft EIS is also available from the National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia, 22161 for a cost of \$29.00 per printed copy or \$3.50 for microfiche. The telephone number of NTIS is A/C 703, 487-4642, and the order number is AD A092541.

This public notice is being distributed to all known interested parties. Please bring this announcement to the attention of anyone you know who may be interested.


GEORGE P. JOHNSON
Colonel, Corps of Engineers
District Engineer

NOTICE TO POSTMASTER: It is requested that this Notice be posted conspicuously and continuously for a period of 45 days from the date of receipt.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, BUFFALO
1776 NIAGARA STREET
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		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Marks, A.K.; Horvatin, P.J.; Leuchner, P.G.; Saulys, V. et. al.		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Army Corps of Engineers, 1776 Niagara St., Buffalo, NY 14207 and Great Lakes Nat'l Program Office, U.S. Environmental Protect. Agency, Region V, Chicago 60605		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Same as Item 9		12. REPORT DATE March 1982
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) An abbreviated statement which incorporates by reference the Draft Programmatic statement of the same title dated November 1980 for detailed information. The document summarizes the environmental impacts associated with development of natural gas beneath U.S. waters of Lake Erie's eastern and central basins bordering the States of New York, Pennsylvania, and Ohio; provides errata and addenda to the Draft statement; and responds to comments received on the Draft Statement. Major topics of discussion include: applicability of using the (con't)		

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Item 20.

Canadian Lake Erie drilling experience; establishment of a Task Force and in each state an offshore office for program coordination; waste disposal methodology; need for natural gas; the role of the International Joint Commission, the 1909 U.S.-Canada Boundary Waters Treaty, and the 1978 Water Quality Agreement; the effects of resuspending sediment; validity of using worst-case accident analysis in lieu of Canadian accident data; contingency plans and spill cleanups; the effects of polyethylene glycol chlorination; impacts on water supplies and water treatment costs; an onland alternative program; and an explanation of the reference program concept.

NOTE: The Draft Programmatic Environmental Impact Statement entitled U.S. Lake Erie Natural Gas Resource Development is available from the National Technical Information Service, U.S. Dept of Commerce. Order number AD A092541. It was filed with the U.S. Environmental Protection Agency on 21 November 1980.

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DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

23 March 1982

ERRATA to Final Programmatic Environmental Impact Statement entitled "U.S. Lake Erie Natural Gas Resource Development." Subject document was filed with the U.S. Environmental Protection Agency on 19 March 1982.

Several typographical errors are contained in the document referenced above. The symbol, " $\mu\text{g/L}$ " (micrograms per liter) was inadvertently typed as, " mg/L " (milligrams per liter) in discussions related to trihalogenated methanes. The errata listed below correct these typographical errors. The assessment of environmental effects is unaffected by these errors and remains unchanged.

Page 1-11, second paragraph of section 1.033:

In line 10 change the standard for total trihalogenated methanes from 100 mg/L to 100 $\mu\text{g/L}$.

Page 3-17, section 3.061:

In line 6 change "100 mg/L " to "100 $\mu\text{g/L}$ ".

Page 3-17, section 3.062:

In line 2 change "24 mg/L " to "24 $\mu\text{g/L}$ " and in line 3 change "32 mg/L " to "32 $\mu\text{g/L}$ ".

FINAL PROGRAMMATIC
ENVIRONMENTAL IMPACT STATEMENT:
U.S. LAKE ERIE NATURAL GAS RESOURCE DEVELOPMENT

Prepared by
U.S. Army Corps of Engineers,
Buffalo District and the
U.S. Environmental Protection Agency,
Great Lakes National Program Office,
Region V

1-82 1-32

This Final Environmental Impact Statement (EIS) is of a programmatic nature. A programmatic EIS assesses the effects of a broad proposal, such as gas development, over a large area or region. Initial program statements present sufficient information regarding the generic impacts of an action so that decision makers can make a reasoned judgement on the merits of the action at the present stage of planning or development. The use of a programmatic EIS is such that it can be followed up with site-specific statements or supplements, as necessary, which may refer back to the original EIS for general discussions and concentrate on the issues specific to the statement or supplement subsequently being prepared. This particular programmatic EIS on gas resource development will be used to determine the environmental acceptability of gas development in U.S. Lake Erie in principle under a given set of constraints and a given program. If gas development is ultimately found acceptable, future specific proposals by applicants could be assessed on a site-specific basis with this programmatic EIS being referenced. Specific information concerning public and private need for each operation could be detailed for each application.

FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT:
U.S. Lake Erie Natural Gas Resource Development in
Offshore Waters of New York, Pennsylvania, and Ohio

Responsible Lead Agency: U.S. Army Engineer District, Buffalo
Responsible Cooperating Agency: U.S. Environmental Protection Agency,
Great Lakes National Program Office,
Region V

Type of Action: Administrative; Corps of Engineers-Permit Action

The proposed action under consideration is the issuance of permits by the U.S. Army Corps of Engineers (Corps) and U.S. Environmental Protection Agency (USEPA) to lessees engaged in state-initiated development of offshore gas in Lake Erie. The regulatory involvement of the Corps is related to its authority to issue or deny permits under Section 10 of the River and Harbor Act of 1899 and Section 404 of the Clean Water Act. USEPA has review responsibilities for Section 10 and Section 404 permit applications and also for developing effluent guidelines for the oil and gas industry and standards for air and water quality for Lake Erie. The study was initiated through an Interagency Agreement between the Corps and USEPA in anticipation of applications for federal permits related to various gas development activities. The action will culminate with a determination of whether or not U.S. Lake Erie natural gas resource development can be accomplished in an environmentally acceptable manner and, if so, under what circumstances. The Final EIS is in abbreviated form and consists of two volumes. Volume One is the Draft Programmatic EIS which was filed with USEPA Headquarters on 21 November 1980. This is Volume Two which consists of : a summary of environmental impacts; a list of errata; a public involvement section; and a section consisting of a reprint of comments received on the Draft EIS and the Corps-USEPA responses to those comments.

For further information on this statement, please contact:

CORPS Mr. Arthur Marks
Department of the Army
Buffalo District
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207
(716) 876-5454

USEPA - Mr. Paul Horvatin
Great Lakes National Program
Office
U.S. Environmental Protection
Agency - Region V
536 South Clark Street
Chicago, Illinois 60605
(312) 353-3612

Draft EIS filed with EPA on: 21 November 1980
Send your comments on the
Final EIS to the District
Engineer, Buffalo District by: NOV 21 1982

DISCLAIMER

The reviewer is cautioned that any reference to trade names, commercial products or processes, and various information available through purchase in the Environmental Impact Statement does not constitute endorsement or recommendation for use by the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency.

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1: SUMMARY

FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT: U.S. Lake Erie Natural Gas Resource Development in Offshore Waters of New York, Pennsylvania, and Ohio

1.001

1. Type of action. Administrative; Corps permit action under the jurisdiction of Section 10 of the River and Harbor Act of 1899 and Section 404 of the Clean Water Act.

1.002

2. Purpose and need. The proposed action under consideration is the issuance of permits by the U.S. Army Corps of Engineers (Corps) and U.S. Environmental Protection Agency (USEPA) to lessees engaged in state-initiated development of offshore gas in Lake Erie. In the absence of a project advocate and project proposal, lease sales by New York, Pennsylvania, and Ohio were postulated and a Reference Program was developed that sets forth realistic assumptions concerning operational procedures and constraints, federal/state program administration, level of industry involvement, gas production, etc. The Reference Program contains a set of guidelines incorporating state-of-the-art technologies and strict operational procedures designed to minimize possible releases to the environment of materials used and residuals generated. This Reference Program and accompanying guidelines will be subjected to a test of environmental acceptability. After this Final Environmental Impact Statement (EIS) is publicly reviewed, the Corps and USEPA will determine whether U.S. Lake Erie natural gas resource development can be: (1) approved as defined in the Reference Program, (2) approved as defined with qualifications, (3) disapproved as unacceptable in principle. Evaluation of alternative control programs is deferred pending permit application.

1.003

3. Areas of controversy (issues)

- (a) Availability of natural gas to regional industrial energy consumers.
- (b) Need for offshore Lake Erie gas development.
- (c) Profitability of Lake Erie gas development to industry operators
- (d) Availability of gas resources beneath the Lake
- (e) Administration and regulation of offshore gas development.
- (f) Alternatives to offshore Lake Erie gas development
- (g) Potential significant impacts resulting from the following offshore program activities or phenomena:

- disposal of residuals
- disturbance of toxic sediments
- accidents

- (h) Problems for offshore gas development caused by regional seismic activity (earth tremors or quakes) or Lake Erie ice
- (i) Potential significant impacts from offshore development of gas to the following resources:

- water quality
- aquatic ecology
- potable water
- land use
- recreation
- ports, shipping, and navigation
- cultural resources

4. Conclusions.

The conclusions reached on items of concern listed in 1.003 (3) (a) to (i) above are as follows:

1.004

(a) The Lake Erie region is a net importer of natural gas. Although 2037 BCF (billion cubic feet) of gas was delivered to consumers in New York, Pennsylvania and Ohio during 1977, only 200 BCF of gas was produced within the three states during the same period. A large portion of natural gas imported into the region is piped from the southwestern producing states. Currently (Fall 1981), there is a temporary surplus of natural gas regionally and nationally which has resulted from some fuel switching, conservation measures, price competition from alternative fuels, a slow-down of the national economy, increased wellhead prices allowed through the Natural Gas Policy Act, and state incentives for increased local production. No natural gas shortages are predicted at this time. However, the heavily industrialized Lake Erie region could experience a repetition of events that resulted in a gas availability crisis and imposed user curtailments during the heating seasons of 1976-1977 and 1977-1978. The Federal Energy Regulatory Commission (FERC) survey of the 1980-1981 winter gas supply indicated no shortages for the season and concluded that the short-term supply picture will improve. However, the long-term outlook is less clear and no realistic forecast of gas supplies can be projected beyond the next few years until the effect of the Natural Gas Policy Act on production can be better evaluated.

1.005

During the late 1970's and early 1980's, the Lake Erie region experienced a surplus of natural gas. Most gas industry analysts agree that the current surplus is a short-term situation, probably lasting until the early to mid 1980's. Most projections agree that all conventional natural gas resources will have to be developed in order to satisfy the demand for gas in the mid

1.005 (continued)

or long term. Gas supply projections do not indicate which conventional sources will have to be developed; rather they imply that all available conventional sources will have to be utilized. Natural gas supply projections also show a continued decline in production from the lower-48 state conventional supplies. In the mid or long-term period, increasing volumes of natural gas will have to come from unconventional sources. Due to long lead times and large financial investments necessary to develop unconventional sources, it is not realistic to assume that these sources are immediate answers to supply problems. Natural gas supply projections are primarily based on important assumptions about unconventional sources. If some of the assumptions ultimately prove to be incorrect and as conventional supplies decline, shortfalls of gas could occur.

1.006

(b) It is important to emphasize that this EIS has been developed without the benefit of a project advocate (applicant) and it has therefore been necessary to postulate purpose and need based on realistic assumptions and information. The need for U.S. Lake Erie natural gas has varied greatly over the past 30 years, depending partly on the perspective from which the problem is viewed. However, the region bordering the southern shore of Lake Erie is a national industrial center, a net importer of energy resources, including natural gas. For the purpose of this EIS the impetus for development is defined as an attempt by the three states to provide a more secure natural gas reserve and provide flexibility in supply sources.

From the national perspective, the U.S. Lake Erie resource, in itself, would do little to offset any future national disparities between natural gas supply and demand. However, the solution to the energy problem in the long term can only be achieved if all practicable supply options are pursued. Cumulatively, development of small reserves can provide supplements or wedges to buffer any unexpected setbacks in other gas supply options.

1.007

(c) Using pricing and production assumptions as outlined in the Reference Program, an economic evaluation of net present value and return on investment has demonstrated that offshore development can be profitable for industry operators. The program remains profitable even if production estimates are decreased by as much as 20%.

1.008

(d) Numerous geologic studies have led to the generally accepted conclusion that gas-bearing formations underlie U.S. waters of Lake Erie. Formations of primary interest are Lower Silurian Clinton-Medina sandstones and Middle Silurian Lockport Formation biohermal reef structures. Within a broad band of deltaic sandstones that make up the Clinton-Medina formations, abundant gas is expected, where conditions are favorable, from wells in central and eastern Lake Erie. Under Reference Program assumptions, one well will be drilled on every 640 acres of nonrestricted lake bottom; 65% of these wells will be successful in Ohio; 70% will be successful in Pennsylvania; 85% will be

1.008 (continued)

successful in New York. Gas-bearing Lockport reefs are postulated to exist in Ohio waters of Lake Erie. These Middle Silurian Lockport Formation reef structures are more widely scattered and their locations are not easily predicted. Confirmation of the presence of gas-bearing structures in U.S. waters of Lake Erie would require industry purchase and interpretation of existing seismic data or collection and interpretation of new data in addition to on-structure exploratory drilling. Lockport reefs-which are localized, stratigraphic gas traps-will yield an even greater percentage of productive wells than stratigraphic Clinton-Medina sandstones.

1.009

Cumulative gas produced over the lifetime of the Reference Program is estimated at 1.2 TCF in Ohio, 0.15 TCF in Pennsylvania, and 0.17 TCF in New York. Cumulative state revenues generated from cash bonus bids, delay rental fees, and gas royalties are estimated at \$4290 million in Ohio, \$247 million in Pennsylvania, and \$406 million in New York.

1.010

(e) The first step in implementing the Reference Program would be the creation of a regulatory Task Force representing the three states and appropriate federal agencies. The Task Force would develop standard lease forms, drilling permit forms, and construction and operation permit forms. The Task Force would be responsible for recommending a minimum set of federal and state standards to guide offshore development activities. A single set of operating standards (rules and regulations governing drilling and casing procedures, drilling fluid programs, procedures for collecting and storing materials used and residuals generated, waste disposal, use of safety equipment, installation of wellheads and pipelines, etc.) is assumed to be adopted by each state that participates in the offshore development program. The Task Force could draw upon the expertise of the existing Interagency Study Group which is currently serving to support the entire environmental assessment process.

1.011

The Task Force would also draft the necessary enabling legislation to authorize offshore gas drilling and would create a standing review committee representing the three states and appropriate federal agencies to monitor administrative progress, maintain uniformity of the regulatory program, and communicate with state authorities about the program.

1.012

An integral part of the enabling legislation would be the creation of one office (the offshore program office) in each state to manage the total program. Although various permitting authorities would remain in the state and federal offices, all requests, evaluations, and reviews would go through the offshore program office and this office would work jointly with the appropriate state and federal permitting offices in administering the permit program. All review and monitoring of permit restrictions would remain the responsibility of the permitting agency.

1.013

(f) Alternatives

- Alternatives to the Proposed Action

-Alternative Supplies of Natural Gas

- Regional Land-Based Resources
- Domestic Conventional Reserves
- Domestic Unconventional Reserves
- Imports of Foreign Gas

-Alternatives That Extend Natural Gas Supplies

- Low-Btu Coal Gasification
- Medium-Btu Coal Gasification
- High-Btu Coal Gasification

-Conservation, An Alternative That Reduces Demand

-Alternatives Within the Proposed Action

-Modification of the Reference Program

1.014

Of eight alternative natural gas supplies analyzed, only regional onland reserves, Outer Continental Shelf reserves in the Gulf of Mexico and Alaskan Reserves appear to have the potential for near-term increased production comparable to the Reference Program. Development of these resources could provide an alternative to the Reference Program. Other supplies such as tight sands, geopressured aquifers and coal seam methane depend on technological advances and pricing considerations. Imported gas is not expected to increase and prices are expected to remain well above that of domestically produced gas. The coal gasification alternatives do not appear to be reasonable alternatives to the Reference Program in the near term due to a variety of reasons including transportation difficulties, the quality of the gas as a substitute, cost, the quantities expected to be available, and the need to construct high cost facilities. Conservation in the short-term will reduce

1.014 (continued)

natural gas demand in the Lake Erie region. Further demand reduction to a point comparable to projected U.S. Lake Erie production would be possible with expensive investments by end-users in more energy efficient houses, plants and equipment. The end result of this alternative would be to postpone developments of natural gas, including the Reference Program, until such time as demand would again necessitate development. Alternatives within the Proposed Action itself such as modification of the Reference Program are deferred pending permit applications.

1.015

The alternatives to the Reference Program would eliminate impacts to Lake Erie with the following exceptions: development of regional onland resources in the Lake Erie watershed, construction of transmission systems from other sources into the Lake Erie watershed, construction of synfuel and coal gasification plants and ancillary facilities in the watershed, and any deposition of airborne pollutants to the Lake from new sources constructed outside the region. The environmental impacts of the alternatives, exclusive of conservation, would be transferred to other locations of the nation or to foreign countries. The impacts of the three most viable alternatives to the Reference Program (regional onland program, Gulf of Mexico and Alaskan gas) are assessed as follows: The onland regional development is comparable to the Reference Program in overall impact on the Lake Erie region; the production in the Gulf of Mexico and Alaska in the alternative reserves greatly increases the chance of significant oil contamination and the overall impacts are orders of magnitude greater than the impacts of the reference program.

1.016

(g) Disposal of Residuals - The materials used and residuals generated will be (wherever possible) collected, stored, and relegated to land disposal. The following residuals will be collected and brought to onshore treatment/disposal facilities: precompletion formation water, drilling fluids, deck drainage, completion fluid, spent acid and stimulation returns. After phase separation in a settling pond, any oil and solid sludges will be removed to a landfill approved under the Resource Conservation and Recovery Act (RCRA). Treated liquids will be disposed of using onland spray-irrigation or other appropriate technologies. Drill cuttings, excess cement, and domestic waste will be transported to shore and disposed of in conventional landfills. Sanitary wastes will be transported to shore and treated in existing municipal waste-treatment facilities. Any formation water accompanying produced gas to shore in pipelines will be collected and reinjected into suitable onland, subsurface formations.

1.017

Some existing landfill sites are presently polluting groundwater and must be avoided. There would be low potential for additional groundwater degradation if wastes are disposed of in existing or new settling ponds and/or landfills that are properly designed and constructed and that meet applicable criteria and regulations. If injection wells are properly developed in appropriate

1.017 (continued)

host formations sufficiently isolated from shallow freshwater aquifers, the risks of contamination would be low. Construction of new waste treatment/disposal facilities would preempt the further use of that land for wildlife habitat unless and until that land could be reclaimed. The total volume of land preempted is insignificant on a regional scale. To avoid environmentally sensitive areas, state-of-the-art suitability/constraint analysis techniques will be required to locate treatment/disposal facilities and any new landfills.

1.018

Conventional landfill sites are limited in the Lake Erie region, and sites for RCRA-approved landfills will be even more restricted. For disposal of sludges from onland waste treatment/disposal facilities, an alternative to using the few hazardous waste landfills in the region would be the use of onland dredged spoil disposal sites; provided the monitoring and disclosure requirements and restrictions on the use of hazardous additives obviates the necessity to dispose of these materials in a hazardous waste disposal facility. The exclusion of gas drilling wastes from the RCRA hazardous waste category in revised RCRA regulations, may minimize the need for RCRA hazardous waste disposal sites. Disposal would still be covered under Subtitle D of RCRA.

1.019

Disturbance of Toxic Sediments - Sediment resuspension is unavoidable during certain phases of the Reference Program. Sediment releases from program activities will be temporary; the disturbance sites will be dispersed throughout the U.S. waters of Lake Erie and isolated from water intakes, effluent outfalls, and environmentally sensitive areas by appropriate buffer zones. Impacts to water quality should be minor due to the localized and temporary nature of sediment resuspension.

1.020

Even though contaminated sediments may be released, in deep water activities, the plankton community should be spatially isolated from the material since plankters are usually associated with surface waters and resuspension would occur near the lake bottom. During pipe-trenching activities in shallow nearshore areas, plankters could come into contact with resuspended sediments and the local plankton community could be impacted. Bioconcentration of toxic elements potentially contained in sediment could occur.

There is also the potential for synergistic effects on aquatic organisms (an effect whereby two or more contaminants have an impact on the receptor organism that is greater than the sum of the individual effects). However, considering the short duration of exposure, the small area affected, the dispersion of resuspended material, and the fact that many contaminants remain retained on particulates and many others are resorbed on particulates, significant adverse impacts are not expected. Although there is currently no single encompassing theory or model that can predict bioaccumulation and/or synergistic effects, there are various chemical and biological tests that can be performed on a site-specific and proposal-specific basis to give an indication of whether or not these effects will occur.

1.021

Accidents - Releases of petroleum-related hydrocarbons, raw natural gas, and polyethylene glycol will occur only during accidents. The postulated accidents that produce these releases are loss of well control, rig or barge capsize, gas-line breakage, and glycol-line breakage. Occurrence of these accidents is highly unlikely. Although loss of well control would result in releases of petroleum-related hydrocarbons for periods of up to 15 days, the releases would be small and would impact localized areas. Hydrocarbon concentrations from releases should be dispersed to background concentrations fairly rapidly. A rig capsize, releasing diesel fuel, would also impact localized areas. Polyethylene glycols, released during a glycol-line break, would not substantially impact water quality directly, although chlorination of these compounds in a potable water intake is a potential source of impact.

The potential health risk associated with accidental release of di- or triethylene glycols is associated with the trihalogenated methanes (THM) that may be formed during chlorination of a public water supply. Trihalogenated methanes are potential carcinogens and are regulated by drinking water standards. Any accidental release of polyethylene glycol may cause a minor and temporary incremental increase in the levels of organic precursors for THM production, but should not result in THM concentrations that exceed the primary drinking water standards. The potential for THM production in the event of an accident involving polyethylene glycol can be reduced by altering the chlorine application procedure at the water treatment plant and by maintaining the pH near neutral during chlorination.

1.022

If jack-up rigs, drillships, or stimulation barges capsize, numerous compounds would be released into Lake Erie. Potentially toxic compounds, such as chrome lignosulfonate, barite, and hydrogen sulfide, would be rapidly dispersed or removed from the water column by escaping into the atmosphere or by absorption onto particulates and deposition on the lake bottom. Impacts to water quality would be minimal due to the localized and temporary nature of discharges from capsized vessels.

1.023

Accidental gaseous releases from an explosion and fire at a gas treatment plant or from the rupture of an 8-inch gas flowline could have a potentially deleterious effect on the general public. Combustion products resulting from an explosion and fire at a treatment plant include sulfur oxides, particulates, and hydrocarbons. Although the specific impact of this event on residents in the plant vicinity cannot be quantitatively assessed, it is expected that these residents would need to be evacuated. The rupture of a natural gas flowline, either onland or underwater, could result in the buildup of combustible gases and an explosion if an ignition source is nearby. For example, a ruptured 8-inch gas flowline could bubble gas to the

1.023

Lake surface and, under worst-case dispersion assumptions, result in a potentially explosive cloud extending to the atmosphere. The area peripheral to this potentially explosive cloud would have to be identified and restricted from use by all boaters. The same event could occur with the rupture of onland gas flowlines and nearby residents would have to be evacuated. The rupture of an 8-inch flowline carrying H_2S gas (hydrogen sulfide) would require the evacuation of all people within 500 m of the break to avoid the toxic effects of the gas. Beyond the point of toxic effects, a larger area would probably be voluntarily evacuated by anyone in the area to avoid the annoying smell of H_2S gas.

Affected areas would need to remain evacuated until the release of gases from the leak could be stopped and until the potentially explosive and/or toxic gases had a chance to disperse.

1.024

(h) Several seismically active areas have been identified in the Lake Erie region; one of these is in northwestern Ohio where a northeast-trending cluster of earthquake epicenters has been recorded. A smaller cluster of epicenters exhibiting much less seismic frequency and earthquakes of no greater intensity than a Modified Mercalli (MM) scale of VI occurs in northeastern Ohio. A smaller, west-trending seismic area exists in western New York and Ontario; except for one high-intensity earthquake that occurred near Attica, New York (MM VIII), the intensity of earthquakes experienced in this region is generally low.

1.025

The overall frequency and intensity of seismic activity in the region is low and will probably not constrain Reference Program activities. In support of this conclusion, over 30 years of off-shore drilling in Canadian waters of Lake Erie has not resulted in any documentable problems caused by seismic activity. According to Reference Program assumptions, earthquakes of intensity up to MM V or MM VI are expected to have little, if any, effect on offshore wells drilled and completed.

1.026

The Reference Program has been designed to minimize damage from lake ice to rigs, vessels, pipelines, and wellheads. The drilling season has been defined so that opening dates reflect average seasonal dates that ice clears from different sections of the Lake:

Open Drilling Season

New York:	May 1 - October 31 (184 days)
Pennsylvania:	April 1 - October 31 (214 days)
Ohio:	April 1 - October 31 (214)

1.027

Pipelines within the 30-ft water depth contour will be buried to a depth of between 5 and 10 ft. to avoid damage from nearshore ice pileups. Wells will be prohibited from the nearshore area where damage from ice scour would be greatest. Deeper water wellheads will be placed below the water/sediment interface in cellars (protective collars) when drilled by jack-up rigs and where consolidated sediments will support a subsurface structure.

1.028

Despite the precautions taken to minimize ice contact with Reference Program structures, some accidents resulting from ice scour may still occur. Environmental impacts resulting from these accidents are not anticipated to be significant.

1.029

(i) Water Quality - The Reference Program is designed to limit discharges to the maximum extent practicable and to incorporate state-of-the-art technologies to protect water quality. Local, short-term degradation of water quality will result from rig placement and removal, well stimulation, underwater pipeline construction in the nearshore zone, removal of pipelines during decommissioning, and accidental releases of materials and residuals. Impacts to water quality from sediment resuspension and fluid releases should be minor due to the localized and temporary nature of the events.

1.030

Aquatic Ecology - Impacts to the aquatic biota of Lake Erie from Reference Program activities may occur either directly to an organism from the chemical and/or physical action of a discharge or indirectly from an activity that affects an organism by modifying its habitat or environment.

1.031

During the pipe-trenching activities in shallow nearshore areas, plankters could come into contact with resuspended sediments and the local plankton community could be impacted. Bioconcentration of toxic elements potentially contained in sediment and synergistic effects (greater than additive effects) may occur. However, considering the short duration of exposure, the small area affected, the dispersion of resuspended material, the retention of many contaminants on particulates and the resorbing of many other contaminants on particulates, significant adverse effects are not expected. Local short-term losses of benthic habitat and aquatic organisms would be unavoidable. Organisms lost during construction activities will be replaced by natural reproduction and immigration from surrounding areas. Cumulative lakewide impacts to aquatic biota from the release of stimulation and decommissioning fluids in the course of seasonal drilling and over the period of time required to develop a lease area are expected to be minimal.

1.032

Reference Program activities could also disturb aquatic macrophyte communities. This disturbance would not be extensive areally and would be temporary. Recolonization of the disturbed area should occur rapidly.

1.033

Potable Water - Under Reference Program assumptions, drilling operations and underwater gas and glycol pipelines are excluded within 0.5 mile of a potable water intake. Concentrations of representative contaminants that may be released during an accident or through routine discharges have been estimated through a worst-case modeling analysis at the release point and at 0.5 mile from the release. At 0.5 mile from the point of release, concentrations of barium, chromium, chloride, and surfactants would be below maximum allowable contaminant levels; these concentrations should not be harmful in potable water supplies. The predicted concentration (0.1 mg/L) of hydrogen sulfide under equivalent conditions would exceed the maximum allowable concentration of 0.05 mg/L; it would produce an objectionable odor at 0.1 mg/L but would be oxidized by chlorine, forming free sulfur or dilute sulfuric acid.

In the case of a pipeline break di-or triethylene glycol may appear at potable water intakes at concentrations up to 1 mg/L (1000 µg/L). There are no drinking water standards for polymeric ethylene glycols such as di-or triethylene glycol. However ambient water quality goals for the monomer, ethylene glycol, have been set at 140 µg/L. Although the levels of polyethylene glycol from a pipeline break are relatively harmless, the chlorination of polyethylene glycol at a water treatment plant could result in the production of trihalogenated methanes (THM). Trihalogenated methanes are potential carcinogens and are regulated by drinking water standards. Trihalogenated methanes have been restricted to levels below 100 mg/L in treated drinking water. An accidental spill of polyethylene glycols may cause a temporary and minor incremental increase in organic precursors for THM production but should not result in THM concentrations that exceed primary drinking water standards. Altering the chlorination procedure and maintaining near neutral pH during chlorination would reduce the potential for THM production.

1.034

Land Use - Because of competition for limited coastal zone land and difficulties in gaining access to shore in areas of high bluffs, the siting of pipeline landfalls will be a problem. Public acceptance of landfalls may be strengthened by arranging for public access to the Lake along pipeline corridors. Use of pipeline rights-of-way by off-road vehicles can cause conflicts with use of private lands both on and adjacent to the rights-of-way.

1.035

Impacts associated with siting, construction, and operation of gas production facilities should be minimal due to the flexibility in siting these facilities away from the shoreline. State-of-the-art site suitability/constraint analysis techniques should be used to locate each pipeline landfall and gas production facility. Land and associated wildlife habitat will be lost to gas production facilities, onland pipeline corridors and waste treatment/disposal facilities unless and until that land is reclaimed to its original condition. When gas production facilities are abandoned, the land may remain in industrial use or it may change to some other use. Erosional degradation and/or removal of topsoil during construction could decrease the future agricultural potential of the site.

1.036

Noise from construction equipment, continual compressor operation and annual underwater pipeline venting will be unavoidable. The degree to which this noise will cause adverse environmental impact is dependent upon the timing and nature of the noise, degree of control technology employed, characteristic surrounding land use, and physical features of the environment that can act to attenuate the noise as it travels away from its source.

1.037

Recreation - Impacts from Reference Program activities to recreational use of beach areas are expected to be slight. Increased commercial use of the Lake and its harbors could increase hazards to recreational boating. The presence of drilling rigs, service vessels, tugs, and barges in the Lake would slightly degrade the "open-sea" character of the Lake.

1.038

Ports, Shipping, and Navigation - The maximum number of vessels committed to the Reference Program includes eight drilling rigs, three stimulation barges, three pipe barges, eight service vessels, and three tow tugs. Existing port facilities in the Lake Erie region will be able to absorb peak vessel traffic increases attributable to the Reference Program. Because of their excellent port facilities, Buffalo, Erie, and Cleveland are likely candidates for development program harbors in New York, Pennsylvania, and Ohio waters, respectively. At least one more Ohio port probably would be used as a service center. Increased traffic due to natural gas development should have a temporary beneficial impact on Lake Erie port facilities.

1.039

Visual and audible warning devices should effectively reduce potential for collisions between rigs and vessels. Mariners will be advised where drilling rigs are and that they are equipped with audible and visual warning devices. The one-mile nearshore buffer zone should alleviate potential navigation congestion around harbors.

1.040

The likelihood of a gas well or pipeline being snagged and broken by an anchor appears minimal.

1.041

Cultural Resources - Reference Program activities that disturb the ground surface or subsurface can be potential sources of direct impacts to cultural resources. Indirect impacts may result from local residents and project personnel collecting, excavating, or otherwise disturbing cultural resource objects and sites.

1.042

Specific impacts of Reference Program activities are being determined as part of a multifaceted cultural resource study of Lake Erie and a one-mile area inland from the lakeshore. A predictive model will be constructed to identify the different potentials of select lease areas for containing cultural resources of various kinds and densities. During review of applications for permits and during leasing procedures, it will be possible to make more realistic appraisals of potential impacts at specific locations, select and conduct the appropriate cultural resources inventories at the sites, and develop programs to mitigate impacts. The multifaceted study will be coordinated with cultural resource agencies and would then be used to guide site specific-proposal specific studies.

2: PUBLIC INVOLVEMENT

BACKGROUND

2.001

During the period between late 1975 and early 1977, the Buffalo District, U.S. Army Corps of Engineers, received inquiries regarding U.S. Lake Erie gas development from various New York, Pennsylvania, and Ohio groups, individuals, agencies, and Congressmen. Most of the letters or telephone calls were received in 1977 and requested information on the Corps' position and regulatory jurisdiction relative to gas development activities in Lake Erie. These early contacts included: Senator James T. McFarland, New York State Senate; the New York State Department of Environmental Conservation; the Lake Erie Basin Committee, League of Women Voters; the City of Dunkirk; Citizens for Clean Air and Water, Ohio; Senator Anthony Calabrese, Ohio State Senate; Schafer Exploration Company, Ohio; and the Pennsylvania Department of Environmental Resources. During these early periods, gas development in Lake Erie was prohibited by the States. The Buffalo District Office responded to the inquiries and also began an internal scoping process to identify issues of concern. This internal scoping ultimately led to the preparation of an environmental guide outlining issues and data needs. The guide was distributed to federal and state agencies and other interested parties for review and comment. While the Corps was performing this task, the states of New York and Pennsylvania lifted existing bans on offshore drilling (1977). In early August 1977, the U.S. Environmental Protection Agency Headquarters, Washington, DC, expressed an interest in coordinating with the Buffalo District Office on Lake Erie gas development studies. This culminated in an Interagency Agreement to study the issues and prepare a generic environmental impact statement. The Great Lakes National Program Office, USEPA Region V, was designated as the coordinating office. Ultimately, the Division of Environmental Impact Studies, Argonne National Laboratory, was selected as the consulting contractor.

SCOPING MEETINGS

2.002

The scoping meetings which were held for this study included representatives of the U.S. Department of Energy, U.S. Department of Transportation, U.S. Fish and Wildlife Service, U.S. Department of Commerce, Great Lakes Basin Commission, Pennsylvania Department of Environmental Resources, New York State Department of Environmental Conservation, Ohio Department of Natural Resources, and the Lake Erie Basin Committee of the League of Women Voters. These meetings were held on August 15, 1977; October 3, 1977; August 21, 1978; and December 14, 1978. Significant issues identified during the scoping process focused on water quality, aquatic ecology, energy availability, need for gas, cultural resources, recreation, navigation, economics, and land-use changes in the coastal zone. Overall, the meetings and technical review assisted in the development and analysis of data contained in the Draft

SCOPING MEETINGS (continued)

2.002

Environmental Impact Statement. Interagency coordination efforts will continue up to the point that a decision is made on the acceptability of gas development in U.S. Lake Erie, and possibly beyond the point of decision, if necessary. The agencies involved in these scoping meetings were organized into a technical team to provide their respective expertise toward development of the Draft EIS, and Final EIS.

ISSUES IDENTIFICATION REPORT

2.003

A report related to the overall study was completed in September 1978. This report is entitled "An Examination of Issues Related to U.S. Lake Erie Natural Gas Development" (prepared by Argonne National Laboratory, Division of Environmental Impact Studies). The authors of the report described gas development activities, identified various issues of environmental concern, presented economic overviews, and discussed the potential for natural gas resources beneath Lake Erie. The report was distributed to scoping team representatives for review and comment. Additionally, the availability of this report was mentioned in the Corps-USEPA notice of intent to prepare an EIS (Federal Register Vol. 44, No. 147, p. 44593, July 30, 1979). Several hundred requests for the initial report have been filled since the publication of the notice of intent, and the names of these requesting individuals, groups, organizations, and agencies were placed on the project mailing list to receive future public notices.

PUBLIC HEARINGS PRIOR TO PREPARATION OF THE DRAFT EIS

2.004

To gain public involvement and input and to inform the public of the study, public hearings were held as follows: Toledo, Ohio, on October 16, 1979; Cleveland, Ohio on 23 October 1979; Erie, Pennsylvania, on October 30, 1979; and Buffalo, New York, on November 1, 1979. Prior to the hearings, information related to gas development activities and potential effects of development was made available to the public. The major concerns raised during these hearings included disposal of residuals, accidents, navigation, water quality, water supplies, disturbance of toxic sediments, alternatives, seismology, effects of ice, administrative and regulatory procedures, economics, and need for availability of gas resources beneath Lake Erie. These concerns were addressed in the Draft Programmatic Environmental Impact Statement.

MEDIA COVERAGE PRIOR TO PREPARATION OF THE DRAFT EIS

2.005

The overall project has been given coverage by newspapers, radio stations, and television stations throughout the affected area. The study has also been described or cited in the USEPA publication "Environment Midwest," the Great Lakes Basin Commission publication entitled "The Great Lakes Communicator," and a University of Wisconsin-Madison, Department of

2.005

Agricultural Economics, article on Lake Erie gas development (J.B. Braden, and D.W. Bromley, December 1979).

DRAFT PROGRAMMATIC EIS COORDINATION

2.006

The draft programmatic EIS was mailed to the U.S. Environmental Protection Agency Headquarters Office on 10 November 1980. It was received by the EPA during the week of 10-14 November 1980 and its availability was published in the Federal Register Vol. 45, No. 227, page 77124, on November 21, 1980. Concurrent with the mailing of the Draft EIS to the USEPA, notices of availability were distributed to agencies and the general public and copies of the Draft EIS were mailed to Federal, State and local agencies, the general public, and libraries or information centers along the shoreline of Lake Erie. A press release announcing the availability of the Draft EIS was distributed throughout the week of 10-14 November to various news media in the affected area and to the national wire services.

2.007

During the Draft EIS review period, six individuals requested that the review period be extended another 30 to 60 days. These requests were not granted based primarily on the following reasons:

- the review period as indicated in the Federal Register of 21 November 1980 had already been voluntarily extended by the Corps of Engineers and Great Lakes National Program Office of EPA to account for the length of the document and the holiday season.
- a 30 to 60 day extension would create both contract difficulties and possible loss of team members working on the document preparation through reassignment to other projects.
- possible loss of consultants requiring the Corps and EPA to proceed with a lengthy search for new consultants and initiate additional conflict of interest reviews.
- contract difficulties and loss of consultants would have a magnifier effect on project delays and cost to the Federal government and ultimately cost to the general public.
- considering the extent of the mailing list (over 4500 parties), the extent of publicity concerning the availability of the Draft EIS, and the early notice of statement availability (about two weeks prior to the filing date), the number of requests for a time extension was minimal.

2.008

Those parties which had requested an extension were advised in writing of the reasons for not granting an extension and were also informed that we would accept comments for a reasonable period of time after the termination date. They were also advised that anytime prior to a decision on the acceptability of U.S. Lake Erie gas development we would consider any substantial new information which was submitted.

NOTICE OF AVAILABILITY MAILING LIST (DRAFT AND FINAL EIS)

2.009

The mailing list for the Draft Programmatic EIS Notice of Availability is extensive and could not be reasonably included in the text of the Draft or this Final EIS. The Draft EIS Notice of Availability mailing list contained in excess of 4500 names. The mailing list is on file at the Buffalo District Office, 1776 Niagara Street, Buffalo, NY 14207 and is maintained in the Regulatory Functions Branch. The list includes news media; mayors; organizations; libraries; local agencies; post offices; individuals; environmental groups; companies and corporations; federal, state, and local government officials; universities; and consultants; located principally in New York, Pennsylvania, Ohio, and Michigan. All those who contacted the USEPA or Buffalo District for information on gas development or attended the pre-Draft EIS public hearings are on the Draft EIS Notice of Availability mailing list. In addition, to facilitate public access, review, and comment on the Draft EIS, copies of the statement were placed in 29 information centers (libraries, town halls, Corps offices) along the coastline of Lake Erie from Buffalo, New York to Detroit, Michigan.

2.010

In an effort to conserve resources and reduce government expense, and to insure that those individuals and parties not interested in further information were not burdened with future mailings, the Draft EIS Notice of Availability included a self-addressed, postage paid postcard to be mailed to the Buffalo District for preparation of the mailing list for the Final EIS notices. The Notice of Availability mailing list for the Final EIS is also on file at the Buffalo District Office. While the list is reduced from the original Draft EIS list, it is still too extensive to be reasonably included in the text of this statement.

DRAFT EIS DISTRIBUTION

2.011

To ensure full coordination, the Draft EIS was sent for review and comment to the Federal, State, and local government agencies, environmental groups, private industries, and individuals listed below: (list includes mailings from 10 November 1980 to the filing date of 21 November 1980).

FEDERAL AGENCIES AND OFFICIALS

U.S. Dept. of Agriculture	Great Lakes Basin Commission
U.S. Dept. of the Interior	Nuclear Regulatory Commission
U.S. Environmental Protection Agency	General Services Administration
U.S. Dept. of Commerce	Interstate Commerce Commission
U.S. Dept. of Transportation	National Endowment for the Arts
U.S. Dept. of Housing and Urban Development	Advisory Council on Historic Preservation
U.S. Dept. of Health, Education and Welfare	Federal Programs Office - Coastal Zone Management
U.S. Dept. of Energy	Federal Regional Council
U.S. Dept. of Labor	National Aeronautics and Space Administration
U.S. Dept. of State	U.S. Senator Daniel P. Moynihan
Water Resource Council	U.S. Senator Jack P. Kemp
Federal Emergency Management Agency	U.S. Senator Howard M. Metzenbaum
Federal Energy Regulatory Commission	
Appalachian Regional Commission	

INTERNATIONAL INTERESTS

International Joint Commission, Washington, DC
Canadian Embassy, Washington, DC
Ontario Ministry of Natural Resources

STATE OF NEW YORK

Coastal Zone Management Office, Dept. of State
New York State Department of Environmental Conservation, Bureau of
Mineral Resources
New York State Energy Office
New York State Office of Parks and Recreation, State Historic
Preservation Officer
New York State Department of Health
New York State Department of Public Service
New York State Department of Environmental Conservation, Office of
Environmental Analysis
State Clearinghouse, Division of Budget
New York State Sea Grant Program, SUNY, Albany
Office of State Archeologist

STATE OF NEW YORK (continued)

Department of Agriculture and Markets
New York State Department of Transportation
Office of General Services, New York State Executive Department
New York State Department of Commerce
New York Job Development Authority
New York State Geological Survey
New York State Assembly Subcommittee on Public Power
Honorable Ronald B. Tills

COMMONWEALTH OF PENNSYLVANIA

Pennsylvania Department of Environmental Resources, Assistant State Geologist
Pennsylvania Department of Environmental Resources, Bureau of Forestry,
Mineral Section.
Pennsylvania Department of Environmental Resources, Division of Dams and
Encroachments
Pennsylvania Department of Environmental Resources, Coastal Zone Management
Branch
Pennsylvania Historical & Museum Commission, State Historic Preservation
Officer
Pennsylvania State Clearinghouse, Governor's Office
Pennsylvania Fish Commission
Pennsylvania Department of Transportation
Coastal Zone Management Program, Edinboro State College
Pennsylvania Game Commission
Pennsylvania Department of Commerce
Pennsylvania Department of Agriculture
Governor's Energy Council
Pennsylvania Department of Health
Pennsylvania Department of Community Affairs

STATE OF OHIO

Ohio Department of Health
Ohio Department of Transportation
Ohio Department of Natural Resources (ODNR), Division of Oil and Gas
State Clearinghouse, Office of Budget and Management
Ohio State Historic Preservation Office
Ohio Department of Natural Resources, Division of Water
Ohio Environmental Protection Agency
Ohio Department of Natural Resources, Coastal Zone Management Office
Ohio Department of Agriculture
Ohio Department of Energy
Ohio Department of Economic and Community Development
Ohio Department of Administrative Services, Bureau of Real Estate
Honorable Anthony O. Calabrese, Ohio Senate
Honorable Dennis E. Eckart, Ohio House of Representatives

STATE OF MICHIGAN

Michigan Department of Natural Resources

REGIONAL, COUNTY AND LOCAL AGENCIES

Erie County Department of Environmental Planning, New York
Erie and Niagara County Regional Planning Board, New York
Erie County Energy Office, New York
Chautauqua County, Planning and Development Agency, New York
Erie County Environmental Management Council, New York
Southern Tier Western Regional Planning-Development Board, New York
Northwest Pennsylvania Regional Planning and Development Commission,
Pennsylvania
Erie County Metropolitan Planning Commission, Pennsylvania
Lorain County Regional Planning Commission, Ohio
Ashtabula County Planning Commission, Ohio
Cuyahoga County Regional Planning Commission, Ohio
Erie Regional Planning Commission, Ohio
Northeast Ohio Area-wide Coordinating Agency, Ohio
Ottawa Regional Planning Commission, Ohio
Lake County Planning Commission, Ohio
Sandusky County Regional Planning Commission, Ohio
Dauphine County (PA) Conservation District

ORGANIZATIONS

Great Lakes Laboratory, State University College at Buffalo
League of Women Voters
Natural Resource Defense Council
National Wildlife Federation
Izaak Walton League
Sierra Club
National Audubon Society
Lake Erie Alliance for the Protection of the Coastal Corridor (Downwind
Neighbors)
Stone and Webster Engineering Corporation
Columbia Gas System Service Corporation
Hammermill Paper Company
University of Illinois at Urbana-Champaign (Department of Agricultural
Economics)
University of Waterloo, Environmental Studies, Ontario
Pennsylvania Electric Company
Michigan State University, Resource Development Department
Forest District Civic Association
Ohio State University, Geology Department
Hiram College, Environmental Resources Center
W.E. Bulmer, Paragon Resources Inc.
Towner Petroleum Company
Luedtke Engineering Company, Marine Contracting

REQUESTS FOR COPIES OF DRAFT EIS

2.012

During the formal review period for the Draft EIS (21 November 1980 to 12 January 1981), approximately 80 interested parties requested and were provided copies of the document. A Table (2-1) showing the names of the requestors and the date of document transmittal is contained at the end of this section of this Final EIS.

COMMENTS RECEIVED

2.013

A list of those agencies and parties who provided written letters of comment on the Draft Programmatic EIS prior to the termination of the comment period (12 January 1981) or within a reasonable time following the close of the review period is contained in the "Comment and Response" section of this Final EIS.

TECHNICAL TEAM MEETING

2.014

On 11 February 1981, the U.S. Lake Erie Natural Gas Development Technical Team met at the Buffalo District Office to discuss their concerns and comments on the Draft EIS. The organizations, groups, legislators, and individuals who attended the scoping meetings held in 1977 and 1978 were also invited to participate in the meeting. Major subjects discussed at the technical team meeting were: ambient Lake Erie hydrocarbon levels, the Canadian experience in drilling and producing Lake Erie gas, accidents, the adequacy and need for the one mile shoreline buffer zone, handling of natural gas containing hydrogen sulfide, waste classification and disposal, self-help gas, the use of seismic data for identification of Lockport reef structures, the reference program economic feasibility analysis, cost of waste disposal, and the size of reference program lease areas. The issues raised at this meeting parallel written comments received on the Draft EIS. Responses to these issues are contained in the "Comment and Response" section of this Final EIS. A summary of the meeting is contained in the administrative record which is maintained in the Buffalo District Office.

PUBLIC MEETING ON THE DRAFT EIS

2.015

A public meeting was held in response to requests for an additional forum to present views. The public meeting was held on 11 February 1981 at Buffalo State College, Buffalo, New York to obtain any pertinent new information that might be available and to afford the public an opportunity to make statements

2.015 (continued)

and ask questions. Various individuals from the Buffalo District Office, U.S. EPA and Argonne Laboratory who prepared the Draft FIS were at the public meeting to answer questions. Oral and written statements were received from the following parties:

Town of Hamburg - by resolution dated 9 February 1981
 Mayor, City of Dunkirk, NY
 Leonard Catalano, resident of Dunkirk, NY
 Ohio Department of Natural Resources (by resubmittal of their original letters of comment on the Draft EIS)
 County Executive, Erie County, New York
 Underwater Gas Developers Limited, Canada
 Don Keohane, Angola, NY
 NY State Assemblyman William Hoyt
 John Loffredo, City of Buffalo Official, NY
 Mayor, City of Buffalo, NY
 Sierra Club Atlantic Chapter, Richard Lippes, NY
 Forest District Civic Association, Bob Chase and Robert Robinson, NY
 NY State Conservation Council, John Bunz, NY
 Paul Indelicato, resident, Buffalo, NY
 Glen Millner, Great Lakes Laboratory, Buffalo, NY
 Peter Zanghi, United Auto Workers Retirees, Buffalo, NY
 Joan Bozer, Erie County Legislator, NY
 Thomas Dearing, Erie County Department of Environment and Planning, NY
 Wayne Leeper, National Fuel Gas Corporation, NY

2.016

The chart displayed below lists the pertinent issues which were raised at the public meeting and cross-references either the sections in the Draft EIS which provide the appropriate information or the responses in the "Comment and Response Section" of this Final EIS which apply to the issue.

ISSUE	REFER TO:
1. Impact of gas development on potable water supplies and water quality.	Topical response number 9 on water supplies, topical response number 6 on sediment resuspension, topical response number 8 on chlorination of polyethylene glycol. Draft EIS paragraphs 4.017 to 4.025 and 4.071 to 4.073.
2. Need and benefits of U.S. Lake Erie Natural Gas	Topical response number 12 on need for natural gas, letter of comment from Federal Energy Regulatory Commission, Draft EIS paragraphs 1.017 to 1.019, 1.150 to 1.161, 3.130 to 3.136, 4.158 to 4.168, and 4.180 to 4.187.

ISSUE

REFER TO:

3. Additional costs for water treatment due to gas development discharges

Topical response number 9 on water supplies and treatment costs, topical response number 7 on contingency plans and cost of cleanups, Draft EIS paragraphs 1.076 to 1.084.

4. Oil encounter during gas development and control if encountered

Response CEH-8, response MCH-1, response ODNH-14, response DOI-6, Draft EIS paragraphs 1.144, C.002, C.004, Tables 1-35 and 4-5, Tables 1-7 and 1-25, paragraphs D.022, D.023 and D.027.

5. Impact of gas development on fisheries and recreation

Responses CEH-17, ENC-10, DOI-15 to 18, and Draft EIS paragraphs 4.046 to 4.049, 4.058 to 4.061, and 4.092.

6. Seismic activity in the region and creation of seismic activity by gas development activities.

Responses CEH-9, DEC-21, GLL-8 and LEBC-7. Draft EIS paragraphs 1.053 to 1.056

7. Release of salt and brines to the Lake during drilling, control of brines and salts.

Responses CEH-12, DEN-14 and UGD-5. Draft EIS paragraphs 1.030, 1.110 and 1.127, figures 1-4 and 1-7, and table 1-7

8. Resuspension of sediment and its effects on fish, water supplies, and water quality

Topical response number 9 on water supplies and topical response number 6 on sediment resuspension. Draft EIS paragraphs 4.031 to 4.034, 4.044 to 4.048, 4.061, and 4.071 to 4.073.

9. Cost of cleanups in the event of an accident.

Topical response number 7 on contingency plans and cleanups, Draft EIS paragraphs 1.076 to 1.084

10. Classification of wastes and their disposal

Topical response number 13 on waste disposal. Draft EIS paragraphs 1.102 to 1.131, D.020 to D.025.

ISSUE

REFER TO:

11. Composition of drilling fluids.

Draft EIS paragraphs 1.103 to 1.119, Tables 1-26 and 1-27, and paragraphs D.020 to D.023.

12. The drinking water standards are of an interim nature and rules are needed for underground injection of wastes. (this issue was raised in response to the injection of formation water as the means for disposal under the reference program)

Response PM-1 and topical response number 10 on the reference program concept.

13. Impacts on water supplies from the chlorination of polyethylene glycol.

Topical response number 8 on the chlorination of glycol.

14. The use of methanol to prevent hydrate formation instead of polyethylene glycol.

Response PM-2

15. The effects of hydrogen sulfide at a distance of 500 meters from an accident involving the explosion of a gas processing plant

Responses PM-3, HHS-1 and HHS-2. Draft EIS paragraphs 4.114 to 4.116, 4.120, and 4.129. Draft EIS table 1-35.

16. Repairing a broken gas pipeline under the ice as compared to the difficulties of rescue attempts during ice cover

Responses PM-4 and CEH-10. Draft EIS paragraph C.008

17. Pollutants should be monitored in the event of contamination.

Response PM-5 and topical response number 7 on contingency plans and cleanups. Draft EIS paragraph D.002.

18. Drilling activities in the open lake dredged disposal area offshore of Dunkirk, New York

Response PM-6, Draft EIS paragraphs 1.059 and D-027.

19. Use of the Canadian gas development experience in Lake Erie

Topical response number 1 on the Canadian experience and topical response number 2 on Canadian accidents.

ISSUE

REFER TO:

20. Adequacy of the water supply buffer zone.

Topical response number 9 on water supplies and topical response number 6 on sediment resuspension.

21. Reason for the Presque Isle, Pennsylvania buffer zone. (this commenter asked if the buffer zone was related to Corps of Engineers Civil works projects off of Presque Isle).

Draft EIS table 1-7 and Appendix A page A-8, item 24b in column 3. This buffer zone was recommended by the Commonwealth of Pennsylvania. It was adopted for use in the reference program but was not initiated by the Corps or EPA. There is no relationship between the Presque Isle buffer zone and Corps Civil works projects.

22. Reduction in the size of well spacing as described in the reference program.

Responses ODNR-9 and DEC-11.

23. Reason for the holding of brines in lagoons on the Canadian side.

Response DEC-24

24. Navigational impacts of gas development.

Responses MCB-3, MCB-4, and CCD-3. Draft EIS paragraphs 4.058 and 4.062 to 4.069.

25. Onland Alternative

Topical response number 11 on the onland alternative and topical response number 10 on the reference program concept.

26. New York State ban on drilling for natural gas in Lake Erie

Draft EIS paragraph 1.002. The ban in New York State on drilling for Lake Erie gas was lifted in 1977.

27. Federal guidelines as they relate to the Task Force and uniform procedures in all three states

Topical response number 3 on the task force and Federal responsibility and topical response number 4 on the offshore office.

28. The use of royalties for cleanup of spills

Topical response number 7 on contingency plans and cleanups, responses CCD-4, CCU-8 and CBXN-3. Draft EIS paragraph 1.068.

ISSUE

REFER TO:

29. Impacts on industries in Buffalo, New York and effects on the revitalization plans of the city.
- Responses to Mayor, City of Buffalo Code: MCB. Topical response number 9 on water supplies. Item number 24 above concerning navigational impacts.
-
30. Adequacy of the reference program economic feasibility analyses.
- Responses DOC-7, DOC-16, DEC-7, DEC-40 to 42, DER-25 to 28, ODNR-24, ENC-23 to 26 RC-2, CSS-17, and LWVO-15 to 17.
-
31. Cumulative effects of gas development.
- Responses PM-7, DOC-7, and ENC-18.
-
32. Alternative water supply for Buffalo, New York
- Responses FDCA-5 and GLL-7.
-
33. If monitoring and enforcement is performed by the three states there will be three different sets of standards and they may not conform to Federal guidelines.
- Topical response number 3 on the Task Force and Federal responsibility and topical response number 4 on the offshore office. Response PM-8.
-
34. The report by Zapotosky and White which is referenced in the Draft EIS indicates that there is significant pollution around Canadian rigs (significantly increased levels of hydrocarbons).
- Response PM-9 and responses WEF-2, CSS-14, CSS-23, CSS-26 and CSS-27.
-
35. The oxidation of methane especially under ice cover will result in anoxia.
- Response WEF-2
-
36. What is the position of the International Joint Commission on Lake Erie Gas Development?
- Draft EIS paragraphs 1.044 and 1.002.
-
37. Where is the pressure coming from to drill for gas in Lake Erie?
- Response PM-10

ISSUE

REFER TO:

38. In the discussion of worst case concentration of polyethylene glycol at a water intake, and in comparing this concentration to the drinking water standard, the units of measurement were switched.

Response PM-11 and Summary of this Final EIS. Topical response number 8 on glycol chlorination.

39. Bioaccumulation and synergistic effects.

Topical response number 9 on water supplies and topical response number 6 on sediment resuspension. Summary of this Final EIS.

TABLE 2-1

LIST OF PARTIES RECEIVING THE
DRAFT EIS DURING THE FORMAL REVIEW PERIOD

<u>Requestor</u>	<u>Date copy was mailed</u>
Ray Waxmonsky-Buffalo State College	Nov 80
Gulf Oil Exploration and Production, OK	24 Nov 80 & 1 Dec 80
U.S. State Dept. OES-PAS	25 Nov 80
Aerial Patrols Inc., OH	25 Nov 80
Regional Sea Grant Office, Fredonia, NY	26 Nov 80
Conservation Council of Ontario, Canada	26 Nov 80
Normandeau Associates, NH	26 Nov 80
Oregon Ohio Area Chamber of Commerce	26 Nov 80
State of New York Executive Dept, Office of General Services	26 Nov 80
Mayor, City of Port Clinton, OH	26 Nov 80
Kalamazoo Nature Center, MI	1 Dec 80
Mimi Becker, Environmental Resources Center, Hiram College, OH	1 Dec 80
Interlakes Yachting Association, MI	1 Dec 80
Donald Adams, Wright State University, OH	1 Dec 80
Justine Magsig, Bowling Green State University, OH	1 Dec 80
Detroit Public Library, MI	1 Dec 80
Steve Nacht, OH	1 Dec 80
Dames and Moore Consultants, Washington, DC	1 Dec 80
Detroit Edison Co., MI	1 Dec 80
Richard Wise, Oil and Gas Consultant, OH	1 Dec 80
Richard Griffith, Petroleum Geologist, Professional Petroleum Services, Inc., OH	1 Dec 80

<u>Requestor</u>	<u>Date copy was mailed</u>
Burl Moyer, OH	1 Dec 80
Sid Keen, Director, Petroleum Resources, Ontario Ministry of Natural Resources, Canada	1 Dec 80
Columbia Gas Transmission Corporation, WV	2 Dec 80
Lanny Katz, ESEI, MI	2 Dec 80
Edward J. Duffy, OH	2 Dec 80
Sierra Club Midwest Office, WI	2 Dec 80
*Columbia Gas System Service Corp., Washington, DC	2 Dec 80
Marquette Biological Station, U.S. Fish and Wildlife Service, MI	2 Dec 80
Oberlin Beach Association, OH	2 Dec 80
Western New England College, School of Law, MA	2 Dec 80
John Ferrell, City Hall, Cleveland, OH	4 Dec 80
Envirogas Inc., NY	4 Dec 80
Toledo Metropolitan Area Council of Governments, OH	9 Dec 80 and 4 Dec 80
Iroquois Research Institute, VA	9 Dec 80
Canadian Consulate, Buffalo, NY	Dec 80
Research Library, Legislative Commission, State House, OH	9 Dec 80
Abonmarch Associates, OH	9 Dec 80
RETREC Inc., MD	9 Dec 80
Colorado State University Libraries, CO	9 Dec 80
*U.S. Coast Guard, Washington, DC	9 Dec 80
Don Wenzel Jr., OH	4 Dec 80
*RECRA Research Corp., NY	4 Dec 80

<u>Requestor</u>	<u>Date copy was mailed</u>
Charles Herdendorf, Dir. Center for Lake Erie Research, Ohio State University, OH	9 Dec 80
Spencer Schofield, NY	9 Dec 80
Durocher Dock & Dredge, Inc., MI	9 Dec 80
Ecological Analysts Inc., NY	9 Dec 80
Institute of Natural Resources, Energy Information Library, IL	9 Dec 80
Joanne Hameister, NY	10 Dec 80
Karl Stiles, NYS Dept. of Health, NY	12 Dec 80
Conservation Foundation, Washington, DC	12 Dec 80
Clayton Russel, Natural Resources, Ball State University, IN	15 Dec 80
Lester Milbrath, Environmental Studies Center State University of NY at Buffalo, NY	15 Dec 80
*Tim Heinrich, OH	15 Dec 80
Robert V. Bartlett, Political Science-Public & Environmental Affairs, Indiana University, IN	15 Dec 80
*Tom Dearing, Erie County Dept. of Environment and Planning, NY	15 Dec 80
*Southern Tier West Regional Planning Board, NY	15 Dec 80
Interdevelopment, VA	16 Dec 80
Columbia Gas Transmission Corp, NY	16 Dec 80
*Beatrice Waterbury, League of Women Voters, OH	18 Dec 80
Doug Hamernick, NY	18 Dec 80
*City of Dunkirk, Director of Public Works, NY	19 Dec 80
Horizon Energy, OH	23 Dec 80
New York Public Interest Research Group, NY	29 Dec 80
Cornell University Agricultural Experiment Station, NY	29 Dec 80

<u>Requestor</u>	<u>Date copy was mailed</u>
Independent Oil and Gas Association of New York	29 Dec 80
Town Supervisor, Brocton, NY	29 Dec 80
Black & Veatch, MI	30 Dec 80
*Donald Keohane, NY	30 Dec 80
Kenal Corporation, NY	30 Dec 80
Supervisor, Town of Evans, NY	30 Dec 80
*National Fuel Gas Corp., Geology Dept., NY	30 Dec 80
Patriot News, Harrisburg, PA	31 Dec 80
Phillip Laub, NY	31 Dec 80
Great Lakes Basin Commission, Program Director, MI	2 Jan 81
John Bettice, Dept of Physiology, Case Western Reserve University, OH	2 Jan 81
Arlington Exploration Company, MA	6 Jan 81
*Sierra Club of Western NY	6 Jan 81
Lorain Journal, OH	6 Jan 81
Energy Users Report, Washington, DC	6 Jan 81
Joan Bozer, Erie County, NY Legislator	12 Jan 81

*Parties that provided either written comments or commented/made statements at the 11 February 1981 public meeting.

3: COMMENTS AND RESPONSES

INTRODUCTION

3.001

Copies of the letters of comment received during the Draft Programmatic Environmental Impact Statement (DEIS) review period are included in this Final EIS. Each letter has been assigned a response code consisting of one or more alphabetical letter, and consecutive numbers have been assigned to individual comments contained in each letter. For example, the correspondence received from the U.S. Environmental Protection Agency has a response code EPA, and the U.S. Department of Energy has a response code DOE. The individual comments in the letters are, therefore, assigned designations such as EPA-1, EPA-2, DOE-1, DOE-2, etc. The letters themselves have been bracketed and coded so the reviewer can readily locate the response to any given comment as provided by the U.S. Army Corps of Engineers, Buffalo District, and the U.S. Environmental Protection Agency, Great Lakes National Program Office, Region V. Both the letters and specific responses have been reduced in size so that the actual letter appears on the left side of a page and the corresponding response appears on the right side. Where appropriate, a written response has been provided for each comment.

3.002

In some cases, a substantial number of comments dealt with one particular area of concern. These comments have been addressed by Topical Responses which appear in the first part of this section (Section 3). Thus, for comments requesting more information on Canadian gas development in Lake Erie, the response would be: "See Topical Response Number 1 on the Canadian Experience." These Topical Responses are designed to answer the comments received on the particular issue. The Topical Responses and the pages on which they appear are as follows:

Topical Response	Title	Page
1	The Canadian Experience in Lake Erie	3-4
2	Impacts of Accidents: Consideration of Canadian Experience	3-5
3	The Task Force and Federal Regulatory Authority	3-6
4	The Offshore Program Office	3-9
5	The Great Lakes Water Quality Agreement of 1978; the 1909 Boundary Waters Treaty Between the U.S. and Canada; and the International Joint Commission	3-10
6	Sediment Resuspension	3-14
7	Contingency Plans and Cleanups	3-15
8	Glycol Chlorination	3-16
9	Water Supplies and Treatment Costs	3-18
10	The Reference Program Concept	3-18
11	The Onland Alternative Program	3-20
12	The Need for Natural Gas	3-21
13	Waste Disposal	3-28

3.003

Some of the letters of comment contained lengthy enclosures consisting of statistical data, reports, large maps, etc. Since this documentation in many cases is not specific to the Reference Program but is simply being provided in association with some of the actual comments contained in the letters or else had no bearing on the comments themselves, it has not been reproduced in the Final EIS in an effort to conserve space and materials. However, the enclosures are available for public inspection at the U.S. Army Corps of Engineers Office in Buffalo, New York. They are incorporated into the official file, and they have been reviewed to determine whether or not their content would change any of the conclusions reached in the Draft EIS.

3.004

The reviewer should be cautioned that staff responses are provided where pertinent issues and concerns are raised regarding the impact of the proposal on the environment. No attempt was made to address comments of an emotional nature or to refute a stated position of agencies, groups, or individuals.

3.005

The comments have been arranged in the following order: U.S. Environmental Protection Agency, other federal agencies, local agencies, and organizations/individuals. Within each of these categories, the comments have been arranged chronologically. The acronyms used to identify the letters of comment are listed below in the order that they appear in the document:

Acronym	Agency/Organization/Individual	Page
EPA	U.S. Environmental Protection Agency	3-30
FAA	Federal Aviation Administration	3-35
SCSO	U.S. Soil Conservation Service, Columbus, Ohio	3-36
NRC	U.S. Nuclear Regulatory Commission	3-37
HUD	U.S. Department of Housing and Urban Development, Buffalo Office	3-38
FHWA	Federal Highway Administration	3-39
HHS	U.S. Department of Health & Human Services, Atlanta, Georgia	3-40
DOI	U.S. Department of the Interior	3-42
FERC	Federal Energy Regulatory Commission	3-47
SCSN	U.S. Soil Conservation Service, Syracuse, New York	3-50
DOC	U.S. Department of Commerce	3-52
DOE	U.S. Department of Energy	3-56
DOS	U.S. Department of State	3-60
CG	U.S. Coast Guard	3-62
PFC	Pennsylvania Fish Commission	3-63
NYAM	New York Department of Agriculture and Markets	3-66
DEC	New York Department of Environmental Conservation	3-69
NYHP	New York State Historic Preservation Office	3-90
DER	Pennsylvania Department of Environmental Resources	3-91
ODNR	Ohio Department of Natural Resources	3-102
OHPO	Ohio Historic Preservation Office	3-112
NYPR	New York State Parks & Recreation	3-113
CCD	Chautauqua County Department of Planning and Development . . .	3-114

Acronym	Agency/Organization/Individual	Page
CEH	County of Erie, Pennsylvania, Department of Health	3-117
STW	Southern Tier West	3-123
CCH	Chautauqua County Department of Health	3-124
CEXP	County of Erie, Pennsylvania, County Executive	3-126
CEXN	County of Erie, New York, County Executive	3-128
ENC	Erie & Niagara Counties Regional Planning Board	3-139
MCH	Mayor, City of Huron, Ohio	3-154
MCB	Mayor, City of Buffalo, New York	3-156
ECC	Erie Area Chamber of Commerce	3-158
FDCA	Forest District Civic Association	3-159
EEC	Elma Environmental Commission	3-164
WEF	Western New York Environmental Federation	3-165
ECS	Erie County Council of Sportsmen Clubs	3-166
TOH	Town of Hamburg, New York	3-167
GPU	General Public Utilities Corporation (Pennsylvania Electric Company)	3-168
DTED	Detroit Edison	3-171
RC	RECRA Research, Inc.	3-172
GLL	Great Lakes Laboratory, State University College at Buffalo	3-174
MNF	Minor Fisheries	3-177
UFF	Universal Field Foundation	3-178
JH	John Hynes et al.	3-179
CSS	Columbia Gas System Service Corporation	3-180
LWVO	Ohio League of Women Voters	3-188
NAS	National Audubon Society	3-192
LEBC	Lake Erie Basin Committee, League of Women Voters, New York	3-194
DK	Don Keohane	3-202
TH	Tim Heinrich	3-203
NCLW	Northwest Ohio Natural Resources Council, League of Women Voters, Ohio	3-206
UGD	Underwater Gas Developers, Limited	3-208
PM	Issues raised at February 11, 1981, public meeting that are not addressed elsewhere	3-210

3.006

This section of the Final EIS is organized so that Topical Responses appear first, followed by the letters of comment and responses to comments. At the end of this section is a list of Errata and Addenda to the DEIS and a list of references used in preparation of this Final EIS. The Draft Programmatic EIS (U.S. Army Corps Eng. and U.S. Environ. Prot. Agency 1980), which was filed with USEPA Headquarters on November 21, 1980, is incorporated into this Final EIS by reference.

TOPICAL RESPONSE NUMBER 1

The Canadian Experience in Lake Erie

3.007

Many commenters asked for further consideration of the Canadian natural gas development operations or stated that we did not consider it at all.

Response

3.008

Pertinent published (and some unpublished) data from the Canadian experience have been utilized in the overall study and are referenced in various sections of the Draft Environmental Impact Statement (DEIS). Along with pertinent U.S. studies and technologies concerning gas development, information from the Canadian experience has been considered, including: information on geology of the Lake, reservoir characteristics, gas stream characteristics, hydrate formation, factors constraining the use of jack-up rigs, factors constraining floating ships, and entanglement of trawl nets on wellheads. We also performed a hydrocarbon survey of U.S. and Canadian waters of Lake Erie (Zapotosky and White 1980), measured and modeled discharges from an operating Canadian rig (Ferrante et al. 1980; Dettmann 1980), and briefly reviewed the history and success of the Canadian program (McGregor et al. 1978). The results of these studies were considered, summarized, and incorporated by reference into the DEIS. However, the subject of the DEIS is the impact on the environment of potential U.S. Lake Erie natural gas development and not the impact of Canadian development on Lake Erie. (Measurement of effects and analysis of environmental impacts associated with the Canadian operation are appropriately performed by the provincial and federal governmental agencies of Canada when deemed necessary under Canadian laws and regulations). Since the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (USEPA) are in a position of having no proposals from industry, we found it necessary to design a Reference Program and analyze the effects of that program. As indicated in paragraph 1.021 of the DEIS, the potential number of programs that could be analyzed is virtually limitless. The Canadian program would be only one of these numerous programs. The cited paragraph further advises that since environmental acceptability is a significant concern and since the analysis is based on only one set of program assumptions, we chose to postulate implementation of the currently available most protective technologies that result in the smallest possible release to the environment of residuals and materials used. This gives a better frame of reference for impact analysis than selection of other possible programs. We would also point out that there is very little recently published literature on the Canadian program which discusses measured effects and environmental impacts, such as the study performed by Ferrante et al. (1980) for the Corps and USEPA.

3.009

The Reference Program is based on analysis of U.S. laws and regulations and ambient conditions on the U.S. side. These laws, regulations, and existing conditions have led to the evolution of the Reference Program. The physical, chemical, biological, and human-use parameters on the U.S. side of Lake Erie are not identical to those on the Canadian side and pose different problems. Some examples include: the population which uses the lake water for drinking; the intensity of recreational use of the lake; the degree of commercial fishing

activity and types of gear used; the depths and quality of sediments; the degree of pollutant input and total loading to nearshore areas; the current, and circulation patterns; and the prevailing ice conditions. Additionally, regulations and laws on the U.S. side of the Lake relative to waste disposal, water and air quality, land use, and other factors were important considerations leading to Reference Program design and regulatory administrative procedures. The Reference Program was designed with these U.S. regulatory constraints and considerations in mind.

3.010

All of the above factors have led to the conclusion that we must independently review and analyze the conditions, concerns, regulations, and laws of the United States and design a program to meet these factors, utilizing the most protective technologies available in the United States.

3.011

In conclusion, although the Reference Program draws from Canadian experience to some extent, it is based primarily on U.S. technology, laws, regulations, concerns, and ambient conditions and is not necessarily comparable to the Canadian program. We have not ignored the Canadian experience but neither do we believe that further review and discussion, even if possible, is warranted or would change the conclusions reached in the DEIS. Specifically, we have made no judgments with regard to the Canadian Lake Erie gas development operations, and we feel that "investigation" per se of their program in this DEIS is inappropriate.

TOPICAL RESPONSE NUMBER 2

Impacts of Accidents: Consideration of Canadian Experience

3.012

Suggestions have been made that discussion of Canadian offshore accidents would be more appropriate than the worst-case analyses used in the Draft EIS.

Response

3.013

We do not agree that discussion of Canadian accidents is more appropriate than the worst-case analyses used in the DEIS, nor would such a discussion change any of the conclusions reached in the DEIS. First, as indicated in the general response to the Canadian experience issue, there is very little recently published literature on the Canadian program, and this includes information of the type we would need for analyses of accident impacts such as: materials released, quantity of the release and duration, location of the incident, ambient conditions at the time of the incident, and measurements of the effects. Our initial review of worldwide accidents associated with offshore mobile rig drilling activities is contained in a report by McGregor et al. (1978--pages 117 to 129). This initial review revealed that: "Of a total 85 accidents reported for all offshore mobile drilling rig activities (between 1955 and 1978), only one involved the Canadian Lake Erie drilling program." There was no information concerning environmental damage for any of the reported accidents. Considering the limited data base in the published literature concerning Lake Erie offshore accidents, we decided that a review of accident possibilities based on worldwide experience coupled with a worst-case analysis of the effects

would provide the broadest range of possible accidents and effects. Secondly, the amount of development in the Canadian Lake Erie program is much smaller than the worldwide experience, and the larger sample is preferable for estimating the likelihood of low-frequency events. For very-low-frequency events, the use of the larger sample is essential. To quote from a discussion of oil blowout possibilities for the Lake Erie program in an independent study by Braden and Bromley (1980): "However, the Canadian sample is much smaller than that for U.S.O.C.S. operations; for estimating the likelihood of rare events, a larger sample is essential ... hence, use of Canadian data would degenerate to a case of zero spill probabilities and the whole question of damages from possible oil spills would disappear from the analysis." We believe that this statement would also hold true for the accident scenarios for natural gas development contained in the DEIS. In other words, if our accident analyses were based on the Canadian experience as reported in the literature, the question of accident effects would decline to a zero case. The worst-case analyses as contained in the DEIS ensure that these potential events do not disappear from analyses and that the effects are discussed. The worst-case analyses provide the best and most conservative foundation upon which to base decisions when other suitable data are not available. It is also consistent with the Council on Environmental Quality regulations for environmental impact statements.

3.014

Moreover, as indicated in the general response to the Canadian issue, the Reference Program was designed to conform with U.S. laws and regulations and with consideration of the concerns and ambient conditions on the U.S. side of the Lake. As such, the Reference Program is not identical to the Canadian program and accident scenarios would differ in each case. Thus, our worst-case accidents are based on potential failures of various Reference Program technologies and methods or are caused in part by geologic conditions, weather, etc., extant on the U.S. side. Consideration of Canadian accidents would include failures of technologies inherent in their program, and possible causes by ambient conditions could differ.

3.015

However, if an accident as serious as the worst-case accidents described in the DEIS had occurred on the Canadian side, it would have been readily detected and most likely could not be hidden from public view. A good example of this is a recent event (June 1980) that occurred in the Canadian program. The Mr. Neil, an offshore jack-up rig in the Canadian program, suffered a fuel line rupture which led to a fire aboard the rig. After the fire was extinguished, the rig was jacked down, towed to port, repaired, and returned to service in six weeks. The on-rig inventory of drilling supplies was not lost, and the environmental consequences of this accident were minor. The incident did not escape publicity and was even reported in U.S. newspapers. This accident was not as serious as the worst-case accidents in the DEIS.

TOPICAL RESPONSE NUMBER 3

The Task Force and Federal Regulatory Authority

3.016

Many comments have been received concerning the necessity of a Task Force and the intended use of the Task Force. Some commenters have stated that the Task

Force concept is essential for the enforcement and application of federal regulations and guidelines necessary to protect the environment. Other commenters have voiced objection to the Task Force concept, advising that it would be difficult to set up, would lead to more red tape and bureaucracy, would delay development, and could be used to extend federal control into state matters. The Task Force concept has been rated from absolutely essential to totally unnecessary.

Response

3.017

Based on the comments received, there appears to be misunderstandings concerning the Task Force. The administrative analysis contained in the DEIS shows that the creation of a regulatory Task Force could lead to a reduction or elimination of duplicative efforts, coordination problems, and other inherent problems associated with the varying responsibilities of the numerous state and federal agencies having authority to control gas development activities. It has been suggested as an administrative tool that would lead to the eventual reduction of problems and to better coordination.

3.018

Regulations of the Council on Environmental Quality have similar provisions and recommend that information necessary for permits, licenses, etc., be included in an EIS. By providing all the necessary information in one document, delays can be avoided, and the need for an applicant to supply many agencies with different pieces of information in separate packages can be minimized.

3.019

The establishment of a Task Force would not be difficult, essentially requiring only the cooperation of involved agencies in appointing members. Legislation would not be necessary to establish the Task Force. The Task Force would not be a regulatory agency but, rather, a voluntary coordinating body consisting of a group of representatives from the various agencies designated to perform certain tasks and advisory functions. As indicated in the DEIS (paragraphs 1.063 and 1.067), the appropriate federal and state agencies would still grant their own permits and leases. All review and monitoring of permit restrictions would also remain the responsibility of the permitting agency. Duties of the Task Force include the development of forms--such as standard lease forms, drilling permit forms, and construction and operation permit forms. The intention of this task is similar to that of the Corps of Engineers procedures that allow for joint permit applications with state agencies. It simplifies permit processing, ensures that all information needs are obtained, and avoids the burden on applicants of supplying repetitive information to various agencies. Properly designed forms would also ensure that all regulatory requirements are evident to the applicant. As indicated in the DEIS (paragraph 1.066), the adoption of minimum standards by the three states would help eliminate disincentives for operators to lease from any particular state and yet, as stated in paragraph 1.065, would not eliminate the flexibility needed to foster healthy competition among the three states.

3.020

Another duty of the Task Force would be to make recommendations to the appropriate federal agencies concerning minimum federal guidelines. This allows for input on refinement and adjustment of the guidelines for consideration by

the federal agencies (DEIS, paragraph 1.063). The Task Force would also recommend the necessary enabling legislation to authorize offshore drilling and an off-shore office. Legislative approval would be needed in each state concerning the recommended legislation, but this is the only legislation anticipated. Finally, the Task Force would create a standing review committee, consisting of representatives of the three states and appropriate federal agencies, to monitor the administrative progress of the program and to communicate with state authorities about the program. These tasks do not supersede the authority already granted to various regulatory agencies.

3.021

In regard to various federal authorities over gas development activities in U.S. Lake Erie, the use of the Task Force to extend federal authority, and the necessity of the Task Force to ensure that federal regulations and guidelines are administered and enforced, the following clarifications are provided:

3.022

- First, the Task Force, as indicated above, is suggested as an administrative tool, and there is no intention by the federal government to use the Task Force as a means of gaining regulatory authority not clearly granted to it by law. The mere fact that federal representation is even suggested does not mean that there is intention to exert more control over activities of gas development. It simply makes sense to include on the Task Force all those entities that will be involved in regulation or can contribute regulatory expertise. Without such representation, the duties of the Task Force in reducing duplicative efforts and improving coordination would become extremely difficult.

3.023

- Secondly, the fact is that whether or not the Task Force concept is implemented, the various activities associated with U.S. Lake Erie gas development--such as drilling, rig placement and location, and installation of pipelines, wellheads, and actual structures themselves--constitute work or structures in or under a navigable water of the United States and are subject to the requirements for permits under Section 10 of the River and Harbor Act of 1899. Additionally, any dredged or fill material that is associated with gas development and is discharged to the Lake is subject to the permit requirements of Section 404 of the Clean Water Act. The Corps of Engineers is the federal agency responsible for issuance of these required permits and, in connection with this responsibility, must analyze the effects of permit issuance and monitor and enforce permit conditions. The involvement of the Corps, irrespective of any Task Force, is an actuality.

3.024

- Thirdly, the Corps permit actions cover a major portion of the inlake activities associated with gas development, and decisions on permit issuance undergo a full public-interest review. This is not any extension of federal regulatory involvement; it is existing authority mandated by law.

3.025

- Fourthly, there is existing federal authority beyond that of the Corps itself which is pertinent to the project. Numerous other aspects of gas

development, including upland activities, fall under the purview of other acts of Congress, such as the Resource Conservation and Recovery Act, sections of the Clean Water and Clean Air acts, the Safe Drinking Water Act, and the Natural Gas Policy Act. Although Ohio, New York, and Pennsylvania have been delegated the authority to administer the NPDES permit program (Section 402 of the Clean Water Act), USEPA retains overview of major permit issuance and reissuance. The USEPA's involvement in the Task Force would be limited to providing clarification of regulations and guidelines dealing with the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, and Safe Drinking Water Act. Due to state delegation of these programs, USEPA's role would be advisory. The U.S. Coast Guard also has responsibility for various aspects of gas development in the Lake, and the pipeline requirements of the U.S. Department of Transportation cannot currently be ruled out. Essentially, federal authority--whether direct through permit issuance or indirect by overview and veto authority--covers major portions of the program, and these existing authorities do not depend on the establishment of a Task Force.

3.026

Federal regulations, requirements, and rules (including guidelines) can be administered, enforced, and monitored even if the Task Force is rejected; and the minimum federal requirements would be applied uniformly throughout Lake Erie. Therefore, whether or not the concept of a Task Force is implemented is not critical to the decision on whether or not drilling for gas in Lake Erie can be done in an environmentally acceptable manner. However, this fact should not be interpreted as meaning that a Task Force is of little consequence. On the contrary, the Task Force could assist in the implementation of uniform procedures, reduce duplicative efforts, improve coordination, reduce permit processing times and problems, ensure that all applicable regulatory matters are covered, and greatly reduce the burden to potential operators.

TOPICAL RESPONSE NUMBER 4

The Offshore Program Office

3.027

Comments have been received indicating that the offshore office suggested in the Reference Program is not needed, that it would take away authority from existing agencies, and that its creation is a federal directive.

Response

3.028

The offshore office, like the Task Force, has been suggested as an administrative tool to assist operators, state and federal agencies, and the general public and local agencies through its information duties. The recommendation to establish an offshore office is not a federal directive. The offshore office would be entirely a state action, established through state legislation and operated by state personnel. In all likelihood, an existing office in each of the three states could assume the responsibilities of the offshore office.

3.029

In the Reference Program, it is assumed that although various permitting authorities would remain in various state offices, all requests, evaluations, and reviews would go through the offshore office and this office would work jointly with the appropriate state permitting agencies in administering the program (DEIS, paragraph 1.067). As indicated in paragraph 1.064 of the DEIS, the complexity and extensiveness of the offshore program requires thoroughly coordinated reviews of all aspects of a state's program to ensure a well-planned and environmentally acceptable program. The offshore office could assist in this by its thorough awareness of all regulatory requirements of the state and federal agencies, as well as the status of all reviews. The offshore office would primarily ensure that applicants are aware of all the necessary requirements, review the status of permit processing, assist in filing the applications, etc., but the appropriate agencies would still maintain their responsibilities to review and monitor permit restrictions. As discussed in paragraphs 1.074 and 1.075 of the DEIS, it is also assumed that the federal agencies would coordinate extensively with the state offshore office. This coordinated approach by state and federal agencies has been assumed because of the overlap of interests and authorities and because of the need for each agency to assess the total development program to carry out its responsibilities.

3.030

We are aware of existing state procedures, such as the Uniform Procedures Act in New York, and the structure and coordination processes of each State's agencies, such as various divisions of the Ohio Department of Natural Resources, bureaus of the Pennsylvania Department of Environmental Resources, and other state agencies and commissions. There are obviously numerous institutional arrangements that could get the job done in an acceptable manner. An offshore office is one approach that could result in improved coordination and operations.

TOPICAL RESPONSE NUMBER 5

The Great Lakes Water Quality Agreement of 1978; the 1909 Boundary Waters Treaty Between the U.S. and Canada; and the International Joint Commission.

3.031

Several comments were received concerning the applicability of the Reference Program to the Great Lakes Water Quality Agreement and the 1909 Boundary Waters Treaty. More specifically, the comments related to provisions of the 1978 Agreement concerning toxic and hazardous substances and Article IV of the Treaty concerning pollution of boundary waters. There were also comments relative to the responsibilities and powers of the International Joint Commission.

Response

3.032

In responding to these comments, we believe that it is important to explain the relationship of the Boundary Waters Treaty to the Water Quality Agreement, to point out the difference between legal regulatory requirements and Agreement objectives, and to explain how the Agreement objectives are intended to be implemented.

3.033

The Boundary Waters Treaty of 1909 between Great Britain and the United States created the International Joint Commission and led to the 1972 Water Quality Agreement. The 1978 Agreement superseded the 1972 Agreement that was promulgated pursuant to the 1909 Treaty. Article IV of the Treaty, among other things, states that "boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property to the other." The 1978 Great Lakes Water Quality Agreement is a specific application of this principle. Articles III and IV of the 1978 Agreement set out the general and specific water quality objectives to be met to ensure that pollution of the boundary waters does not occur.

3.034

Water quality objectives, as contained in the Agreement, are recommendations for minimum desirable levels of water quality to be obtained in the boundary waters of the Great Lakes System and are neither enforceable nor intended to preclude the establishment of more stringent requirements. They take into account the criteria for a whole spectrum of water uses: supplies for municipal, industrial and agricultural purposes; recreation; esthetic enjoyment; and the propagation of aquatic life and wildlife. Once the United States and Canada accept water quality objectives, they are obligated by the Agreement to develop programs and measures (including water quality standards) consistent with achievement of these objectives in boundary waters of the Great Lakes. In general, water quality objectives are goals to be maintained or achieved in all of the boundary waters, through effective pollution-control programs in both countries. Compliance with the objectives is intended to ensure protection of the most sensitive uses of the international waters.

3.035

On the other hand, water quality standards and other legally enforceable regulatory requirements are prescribed levels of waters quality established by governmental authorities in each jurisdiction. They are generically different from objectives. Although water quality objectives are developed on the sole basis of scientifically defensible data to protect the most sensitive uses, standards and similar legal requirements are generally established by each jurisdiction after considering the designated uses, site-specific ecology, factors of social and economic consequences, and technological ability. For this reason, standards are not necessarily identical to water quality objectives.

3.036

In Article V of the 1978 Agreement, the Parties agreed to use their best efforts to ensure that water quality standards and other regulatory requirements will be consistent with the achievement of water quality objectives. In accordance with the Agreement, the U.S. Federal Government has assumed the responsibility to ensure that the water quality objectives are considered in the State Water Quality Standards review process, which is required at least once each three-year period as stipulated in Section 303 of Public Law 95-217, the Clean Water Act. This procedure is clearly a separate procedure from the type of review being performed in this DEIS, which is to determine if gas development, in principle, meets the legal standards. A review of the water quality standards to ensure that they consider the Agreement objectives is clearly independent of and beyond the scope of this EIS. (Note: a document comparing Agreement objectives and Water Quality Standards, dated June 1980, was prepared by the Great Lakes National Program Office, USEPA, but that

document was prepared entirely independent of the Office's role as cooperating agency for this particular EIS).

3.037

Essentially, in regard to hazardous waste management strategy and discharge strategy for the development of gas resources in U.S. Lake Erie, the program must conform to the legally binding standards and regulations of the U.S. federal and state governments. As explained below, there is no requirement that the strategy conform to the Great Lakes Water Quality Agreement of 1978, although we believe that the Reference Program strategy is consistent with the objectives of the Agreement and that the goals of the Agreement are highly desirable. However, as indicated above, the objectives of the Agreement are desired goals rather than legally binding standards and regulations and, in fact, the goals are intended to be implemented through legally binding standards and regulations. In this regard, the legally binding regulations are those promulgated under the Resource Conservation and Recovery Act and the Clean Water Act.

3.038

The sections of the Agreement that are applicable to hazardous waste are Annex 4, Annex 8, and Annex 10. Annex 10 establishes a list of hazardous substances and potentially hazardous substances, calls for maintenance and revisions of the list as necessary, and establishes criteria to be used in identification of these substances. In regard to programs and measures to control the risk of pollution from transport, storage, handling, and disposal of hazardous polluting substances, Annex 10 defers to Annex 4 and Annex 8.

3.039

Annex 4 pertains to the discharge of oil and hazardous polluting substances from vessels and calls for the adoption of regulations to prevent these discharges. Annex 8 pertains to discharges from onshore and offshore facilities and calls for the adoption of regulations to prevent these discharges. The specific objectives of Annex 10, Annex 4, and Annex 8 are clearly to be met through the promulgation and adoption of regulations by the parties (United States and Canada) to prevent these discharges. The purpose of this DEIS is to evaluate the potential environmental impacts of U.S. Lake Erie gas development, review alternatives, and recommend mitigation and guidelines to protect the environment; it is definitely not an EIS that relates to the promulgation of regulations or water control standards to be used to meet the goals of the Agreement. This EIS is therefore based on the regulations that are legally enforceable and currently in existence. The incorporation of Agreement goals into legally enforceable regulations and standards is a subject well beyond the scope of this EIS and beyond the control of the Buffalo District Corps of Engineers.

3.040

In regard to toxic substances, Annex 1 of the 1978 Agreement lists persistent and nonpersistent toxic substances and recommends maximum levels in ambient water and maximum concentrations in fish. Again, these are objectives or desired goals and are not to be confused with the standards legally binding in the United States. Also, any comparison of numbers set forth in standards with numbers recommended in objectives is not valid because objectives and standards are generically different. Annex 12 of the Agreement specifically relates to the persistent types of toxic substances. The intent of Annex 12

programs is to virtually eliminate the input of persistent toxic substances, with the philosophy of zero discharges. As with hazardous substances, the objectives for toxic substances must be met through promulgation and adoption of regulations.

3.041

Aside from the issue of conformance with legal standards vs. objectives, we believe that the design of the Reference Program, its constraints, and its guidelines are consistent with the goals and objectives of the Great Lakes Water Quality Agreement of 1978. The Reference Program does not allow the discharge of drilling wastes into Lake Erie; it calls for onboard containment of wastes with subsequent transport to shore for treatment prior to disposal, and it requires that wastes be confined in facilities designed to handle them in accordance with criteria of the Resource Conservation and Recovery Act (RCRA). The Reference Program, like the Water Quality Agreement, also calls for a manifest system for the waste material; takes all technological steps available to prevent leaks, spills, etc.; calls for contingency plans for accident prevention; includes testing of wastes using RCRA testing procedures; prohibits the development of oil in the Lake as recommended by the International Joint Commission (IJC) in previous years; requires state-of-the-art cutoff valves and blowout preventors; and requires conformance with all Coast Guard requirements for vessels. Additionally, drilling wastes are not subject to RCRA hazardous waste regulations (see Topical Response Number 13 on Waste Disposal).

3.042

The DEIS discussed the International Joint Commission, the 1978 Water Quality Agreement, and the joint U.S.-Canada response to pollution in paragraphs 1.002, 1.022, 1.044, 1.082, 3.028, and 4.017. Water quality reports of the IJC were also used in developing Chapter 3 and Appendix E of the DEIS.

3.043

The IJC plays a significant role in the Agreement but does not have the authority to promulgate regulations or pass legislation necessary to implement the goals and objectives of the Agreement. In the United States on the federal level, new legislation is the responsibility of the Congress and President who in turn determine the appropriate agency(ies) to develop regulations. In regard to hazardous substances and discharges to waters of the United States, the regulations promulgated by USEPA under RCRA and the Clean Water Act (CWA), along with State Water Quality Standards approved under the CWA, are the legally binding and enforceable standards and regulatory mechanisms to which the Reference Program must conform.

3.044

Under Article VII of the 1978 Water Quality Agreement, the IJC was designated to assist in the implementation of the Agreement. Among the responsibilities given to the Commission was the "tendering of advice and recommendations to the Parties and to the State and Provincial Governments on problems of and matters related to the quality of the boundary waters of the Great Lakes System including specific recommendations concerning the General and Specific Objectives" Further, the IJC was directed to establish a Great Lakes Water Quality Board to assist it and serve as principal advisor with regard to the exercise of powers and responsibilities assigned to the IJC under the agreement. The IJC is also empowered by the Agreement to collect, collate,

disseminate, and analyze data and information regarding water quality and the objectives; review the effectiveness of programs intended to implement the objectives; and to make appropriate recommendations. The IJC is also empowered to perform necessary research, prepare reports, and hold public meetings.

3.045

One commenter on the DEIS asked why the 1978 Water Quality Agreement was not contained in Appendix D as one of the rules and regulations applicable to the program. Appendix D lists only legally binding standards, rules, and regulations of the federal and state governments by which the Reference Program must be judged and requirements enforced. Likewise, the guidelines contained in Appendix D are ones that can be enforced under existing federal and state regulations or easily incorporated into state basing programs. Many of the standards and regulations listed in Appendix D are the ones on which the Agreement objectives depend for their eventual implementation. However, there are legal requirements that must be met and procedures that must be followed before objectives could become part of the regulations and standards of the federal and state governments. Since the Agreement consists of objectives rather than legal water quality standards, their inclusion in Appendix D would be inappropriate. In essence, the rules and regulations listed in Appendix D are ones that may be legally applied and enforced in the United States.

3.046

Another commenter made a statement concerning Article II and Article IV of the 1909 Boundary Waters Treaty as it pertains to a lack of requirement that Canadian citizens petition the IJC prior to taking any legal action through the courts of the United States. The intention of this statement is unclear. We fail to see any significant connection between the rights of Canadian citizens in U.S. courts and the analysis of environmental impacts associated with U.S. Lake Erie natural gas resource development, the latter being the explicit subject matter of this EIS.

TOPICAL RESPONSE NUMBER 6

Sediment Resuspension

3.047

Several comments were received that related to impacts associated with sediment resuspension.

Response

3.048

Resuspension of sediments is unavoidable during certain phases of the Reference Program. Those activities producing resuspensions and the potential impacts of these activities are listed in Tables 4-3 and 4-4 of the DEIS. The use of sediment curtains was considered as a method to mitigate the effects of resuspension (paragraph 4.031); however, their efficacy is doubtful in open lake environments.

3.049

The contamination of sediments in the study area has been documented in "An Examination of Issues Related to U.S. Lake Erie Natural Gas Development" (McGregor et al. 1978). The availability of contaminants is influenced by

physical, chemical, and biological factors. Increased availability of contaminants, due to resuspensions alone, is difficult to assess. Natural resuspension of sediments is continual in nearshore areas and occurs throughout the spring and fall in offshore areas. On an areal or temporal basis, resuspensions due to development activities are much smaller than natural resuspensions.

3.050

Under anoxic conditions, the lower redox potential of the sediments and the lower pH of the hypolimnion can be conducive to mobilization of contaminants. It is anticipated that during jack-down (rig) or weighing anchor (drillship), most materials remaining in suspension or solution would remain in the hypolimnion. Contaminants entrained into the epilimnion would encounter a higher pH and oxic conditions (both favor resorption). In a study accomplished under oxic conditions (paragraph 4.031), Ferrante et al. (1980) did not find measurable mobilization of mercury or zinc in resuspension studies of a jack-up rig in Lake Erie.

3.051

Hypolimnetic phosphorous loading relative to epilimnetic values (percent) may be a poor indicator of contaminant loading. During anoxia in the central basin (mid August to late September), there is a marked depletion of phosphorous in the epilimnion. In addition, complex organic and metallic contaminants have different chemical properties. Anoxia in the central basin occurs just prior to fall overturn, at which time mobilized contaminants would be mixed into the entire water column. Characterization of even a major disturbance of anoxic sediments as a "toxic event" is undocumented in the available literature. However, it is recommended that all development activities be prohibited from dredge disposal areas (Table 1-7; paragraph 1.059). Impacts to water quality due to input of toxics or nutrients associated with sediments in other areas are considered minor (paragraph 4.021).

3.052

Contaminants released during sediment resuspension associated with temporary, short-lived Reference Program activities are not likely to be bioconcentrated nor result in synergistic effects to any greater extent than those not associated with Reference Program activities, especially at the lakewide species-population level. During sediment resuspension, most of the contaminants will be retained or resorbed by particulates and redeposited on the lake bottom; constituents left in the water column will be dispersed rapidly. Natural shoreline erosion, turbulent resuspension, and anoxic conditions are the dominant sources of contaminant releases from sediments.

TOPICAL RESPONSE NUMBER 7

Contingency Plans and Cleanups

3.053

Several comments were received that related to the development of contingency plans and cleanup in case of project-related accidents.

Response

3.054

If drilling were to proceed, the development of contingency planning would probably be done by the states and companies involved. The nature and degree of the planning would be dependent upon the specific drilling program planned.

3.055

The extent of ready availability of equipment and materials will be determined by existing law and permitting procedures like those referenced in the document (e.g., pp. 1-39 to 1-41, Table 1-10; p. A-13, No. 33) and the perceived needs if the program is implemented.

3.056

A mechanism is already in place for precollection of cleanup funds. This mechanism includes the cleanup and security bonds now required by some states and the potential for states to use money from royalties and taxes they may collect based on state ownership of mineral rights off their shores in the Lake.

3.057

Also, through a Pollution Revolving Fund (administered under the GLCP by the Comptroller, Ninth Coast Guard District), funds are available for reimbursing state and local governments for the cost of discharge control and removal. Owners/operators are liable to the U.S. Government for costs of cleanup and removal, except where it is demonstrated that the discharge was caused solely by an act of God, an act of war, negligence by the U.S. Government, or negligence by a third party. These are only examples. In addition, existing rules, regulations, and laws require drilling companies to take financial responsibility for certain accidents [see "Accident Contingency Plans" (pp. 1-48 to 1-49) and requirements for the drilling companies (e.g., Item 50, p. A-22)]. If the program is implemented, further rules and regulations may be put into play by government at all levels.

3.058

The need for cleanup is expected to be minimal due to any of the postulated accidents, e.g., release of petroleum-related hydrocarbons, polyethylene glycol, or toxic substances. This is primarily because the effect is expected to be largely local, limited in time, and self-dispersing.

3.059

Should the need occur for a cleanup operation, funds mentioned for contingency plans could be used to take whatever steps were prescribed by law to perform the cleanup in a timely fashion. There is no doubt that unpredictable events in difficult political or weather conditions could slow such cleanup so as to result in some degree of damage.

TOPICAL RESPONSE NUMBER 8

Glycol Chlorination

3.060

Several comments were received concerning health risks associated with glycol chlorination.

Response

3.061

The potential health risks associated with the accidental release of di- or triethylene glycols are caused by the trihalogenated methanes (where the halogens can be either bromine or chlorine) that may be formed during chlorination of a public water supply. Trihalogenated methanes (THM) are potential carcinogens (Natl. Res. Council. 1977, 1978, 1980; Russell 1978), and have been restricted to levels below 100 mg/L in treated drinking water (U.S. Environ. Prot. Agency 1979).

3.062

Total THM concentrations (the sum of all haloforms in solution) in the treated water supplies of the Buffalo Water Department are about 24 mg/L; total THM concentrations in the Cleveland treated drinking water are about 32 mg/L (Symons et al. 1975).

3.063

The primary organic precursors of trihalogenated methane formation are believed to consist of naturally occurring soil humic acids (Crump and Guess 1980; Morris 1975). An accidental spill of polyethylene glycol may cause a minor and temporary incremental increase in the organic precursors for THM production. Actual THM levels are dependent on the season, chlorine contact time, water temperature, pH, type and chemical composition of raw water, and treatment methodology (Russell 1978).

3.064

The reaction of hypochlorous acid (HOCl) and hypochlorite (OCl^-) with glycols produces aldehydes or ketones and, ultimately, halomethanes. The reaction is catalyzed by hydroxyl ions (OH^-); thus, a high pH is required (Natl. Res. Council. 1980; Morris 1975; Jolley 1976). Laboratory studies on haloethane formation indicate that at a pH of 7 and a water temperature of 25°C , the reaction may take up to one year for conversion of all reactants to halo-methanes. Other reactions compete with haloformation; aldehydes can be further oxidized to organic acids and carbon dioxide (Morris and Baum 1978). The small, incremental and temporary increase in organic precursors caused by an accidental spill of polyethylene glycol should not result in THM concentrations that exceed primary drinking water standards.

3.065

Increased THM production has been found in water supplies where prechlorination is practiced (e.g., chlorine is applied to the raw water prior to coagulation and filtration). Increased THM production has also been found in finished water supplies where the free chlorine residual was high. The presence of combined chlorine--chloramines--substantially reduces THM production. A decrease of THM production by as much as 50% may be achieved by applying chlorine with ammonia following solids removal (Hubbs et al. 1979). Thus, to further reduce the risk of THM production following the release of polyethylene glycol, the chlorine application can be altered and the pH should be maintained near neutral during chlorination. In order to implement such procedures, notification must be provided to water supply operators in the event of an accident that releases polyethylene glycol to the Lake. Precautionary steps and emergency response measures are also necessary. This final EIS includes an addendum to the guidelines section of the DEIS (Appendix D, Section D.040) requiring incorporation of appropriate procedures into contingency plans.

3.066

For additional information on the chlorination of polyethylene glycol, refer to paragraphs 1.021 and 1.033 of the summary of this Final EIS.

TOPICAL RESPONSE NUMBER 9

Water Supplies and Treatment Costs

3.067

Several comments were received that related to water supplies and water treatment costs.

Response

3.068

Water supplies and water treatments are discussed in the DEIS on pages 3-16 to 3-19, 4-6 to 4-14, and 4-26 to 4-27.

3.069

Contaminants released during construction of drilling facilities, normal operation, and potential accidents are: suspended solids, surfactants, sanitary wastes, heavy metals, dissolved solids, liquid hydrocarbons, hydrogen sulfide, hydrochloric acid, and polyethylene glycols.

3.070

With the exception of polyethylene glycols, all of the above contaminants are expected to be well below drinking water standards, effluent limitations, and freshwater aquatic life criteria at a distance of 0.5 mile from the release point (as shown in Tables 4-3 through 4-5 of the DEIS). Because drilling activities are restricted to a distance of at least 0.5 mile from any potable water intake, there should be no health hazards associated with these contaminants. Program-related accidents have a low frequency of occurrence. Thus, the potential for significant synergistic effects from simultaneous accidents is extremely remote. A discussion of potential effects from the release of polyethylene glycols is given in Topical Response Number 8 on Glycol Chlorination.

3.071

A description of current procedures used by major water purification facilities in the study area, as well as alternative treatment methods readily available for removal of contaminants associated with natural gas drilling at these purification facilities is given on pages 3-16 to 3-19 of the Draft EIS. Thus, further reductions in the levels of these contaminants can be achieved using current operating procedures, or by using the readily available alternatives. The cost for alternative treatment will be minimal. A discussion of Contingency Plans and Cleanups is given in Topical Response Number 7.

TOPICAL RESPONSE NUMBER 10

The Reference Program Concept

3.072

Several comments were received that asked for clarification of the Reference Program concept.

Response

3.073

Interest by the Corps and the USEPA in evaluating benefits and impacts of U.S. Lake Erie natural gas development has preceded initiation of state leasing programs and formal requests by industry operators to drill in the Lake. Yet, without an engineering program outlining the nature and timing of activities, and requirements for offshore drilling rigs, service vessels, and onshore production facilities, it would be impossible to analyze potential impacts caused by routine and accidental discharges, emissions, and wastes. In the absence of engineering, cost, and personnel data, and activity timing information, a hypothetical Reference Program was developed for the DEIS as a means of identifying necessary conditions for impact assessment. This Reference Program was not developed as a prediction of future events but rather as a set of operational assumptions frozen in time for analysis purposes. All program assumptions were created to be realistic and to make it possible for appropriate decision-makers to answer one question: can U.S. Lake Erie natural gas be developed in an environmentally acceptable manner. The standard for determination of environmental acceptability is defined by existing laws, regulations, and standards for protection of potable water, fish and wildlife, and recreational, esthetic, land use, water use, and other values of the Lake and its watershed.

3.074

Throughout the DEIS, the environmental laws, regulations, and standards used as a measure of environmental acceptability were identified.

3.075

The number of potential programs that could be suggested for assessment is virtually limitless. Each program would have a specific set of assumptions concerning state rules and regulations for offshore gas developers, lease requirements, operator investment strategies, number of potential operators, activity timing, material and labor costs, gas prices, and many other factors. Since environmental acceptability is a significant concern and the analysis is based on only one set of program assumptions, it is necessary to postulate implementation of the most protective technologies currently available for developing and producing natural gas from Lake Erie. This program would result in the smallest possible release to the environment of materials used and residuals generated and consequently minimize environmental damage within available technological limits. If this Reference Program cannot pass a test of environmental acceptability, then offshore U.S. Lake Erie natural gas development must be rejected in principle. In the DEIS, the Reference Program is discussed and evaluated as if it were a real program proposed by an industry operator in the course of applying for all appropriate permits.

3.076

If the Reference Program is judged acceptable, it could be used as a guideline. Specific proposals of future applicants could be weighed and balanced against the Reference Program. Future program proposals that vary significantly from the Reference Program and constitute relaxed technological performance standards could be evaluated on a case-by-case basis to determine the consequences of allowing increasing amounts of materials and residuals to enter the environment.

3.077

Earlier phases of the overall U.S. Lake Erie natural gas development assessment, i.e., the scoping process and field research projects as outlined in the Phase I Report (McGregor et al. 1978), have been based on a study region that corresponds to the U.S. waters of Lake Erie east of a line drawn between Marblehead, Ohio, and Pt. Pelee, Ontario (DEIS; Figure 1-1, map pocket); the land areas included in this offshore portion of the Reference Program Study Region are presented in Table 1-1 of the DEIS. Since only natural gas is being considered for development in the Reference Program, the western basin of the Lake was deliberately deleted from the study region to eliminate the greater possibility of encountering oil reservoirs. This reasoning evolves from the United States' intentions to comply with an International Joint Commission recommendation (Int. Joint Comm. 1970) to prohibit any drilling in the western basin and development of oil and wet gas containing appreciable amounts of liquid hydrocarbons anywhere in the Lake until the United States and Canada are satisfied "that the containment and cleanup methods and the contingency plans for oil spills . . . are adequate."

3.078

Ten counties bordering the southern shore of the Lake (DEIS; Figure 1-2) have also been included in the study region so that inland impacts from offshore and onshore activities could be analyzed and presented. The terrestrial portion of the Reference Program Study Region was limited to these ten counties in order to concentrate assessment efforts in those areas where development and production activities would have direct environmental consequences.

TOPICAL RESPONSE NUMBER 11

The Onland Alternative Program

3.079

Several comments were received that asked for clarification of the Onland Alternative Program.

Response

3.080

An Onland Alternative Program was created as a mechanism for the reader to compare offshore gas development impacts to an onland program of similar magnitude, areal coverage, and timing. This comparative structure was intended to demonstrate relative advantages and disadvantages of implementing an equivalent program in an aquatic and terrestrial environment. The Onland Alternative Program is not offered as a formal development alternative to the Reference Program, i.e., it is not fabricated to the same level of detail because it is not expected to be chosen in preference to the Reference Program. The Onland Alternative Program is presented to allow the reader to examine the Reference Program from a more comprehensive and perhaps more familiar vantage point. Based on a strict definition of the proposed action as the issuance of permits related to various development activities, the only administrative alternative to acceptance of the Reference Program would be denial of permits consequent to conceptual disapproval of offshore development, in principle, based on environmental criteria.

3.081

In order to compare impacts resulting from an alternative program for developing regional gas supplies against offshore Reference Program impacts, a 23-county Onland Alternative Study Region was created. This enlarged onshore study region (see Figure 1-2 of the DEIS) expanded the inland boundaries of the Reference Program Study Region to include those areas where onland exploration could prove the existence of gas resources that could provide an immediate alternative to offshore drilling.

TOPICAL RESPONSE NUMBER 12

The Need for Natural Gas

3.082

A number of comments on the DEIS are directed toward the need to develop the Lake Erie natural gas deposit. The current gas supply situation and the impact of the Natural Gas Policy Act of 1978 upon supply are issues raised in several inquiries. A number of commenters point out that natural gas supply projections, particularly those of the American Gas Association, indicate an adequate future gas supply situation. This Topical Response attempts to answer these inquiries.

Response

3.083

Since many of the questions are concerned with future natural gas supplies, this Topical Response quotes extensively from the supply projections of the American Gas Association (1980) and the Energy Information Administration (1981). These reports present a representative viewpoint of the future need for natural gas in the United States. They also present recent data and thus contain some perspective on the energy-turbulent 1970s. The reader is advised to consult the original reports, or others, for a thorough analysis of the U.S. natural gas supply-demand outlook.

3.084

During the late 1970s and early 1980s, the Lake Erie region experienced a surplus of natural gas. Most gas industry analysts agree that the current surplus is a short-term situation, probably lasting until the early to mid 1980s (reasons for the gas surplus in the Lake Erie region are discussed in paragraphs 2.016 and 2.057-2.061 of the DEIS). In summary, the primary reason for this temporary supply surplus was higher gas prices for end-users. Higher gas prices prompted considerable conservation on the part of consumers, thereby decreasing demand. Other reasons for a gas surplus have been a mature market area in the Lake Erie region, slow economic growth during the past several years, and some fuel switching resulting from natural gas curtailments during the winters of 1976-1977 and 1977-1978. Those who argue that the current surplus of gas is a reason not to develop regional natural gas resources reflect a short-term outlook. Most projections agree that all conventional natural gas resources will have to be developed in order to satisfy the demand for natural gas in the mid or long term.

3.085

The Natural Gas Policy Act of 1978 (NGPA) was intended to stimulate natural gas production and exploration for reserves by permitting producers higher

natural gas prices. Higher wellhead prices have stimulated drilling activity, but it is too early to predict what effect the NGPA will have upon supply or reserves. In a letter to Argonne National Laboratory, the Federal Energy Regulatory Commission (Mr. Jack M. Heinemann, Federal Energy Regulatory Commission, Washington, DC, January 8, 1981) states: "Numerous factors indicate that natural gas supplies will improve, at least for the short term. Reduced demand for natural gas resulting from conservation efforts, a slow-down of the national economy, and price competition from alternative energy fuels such as oil and coal are cited as the reasons for the slight decrease of anticipated deliveries for this winter. However, the long-term outlook for natural gas supplies is less clear. No realistic forecast of natural gas availability can be projected beyond the next few years until the effect of the Natural Gas Policy Act of 1978 (NGPA) on production can be better evaluated."

3.086

It is also too early to assess the impact that the NGPA will have upon natural gas reserves. In a recent report of the General Accounting Office (1981), it was stated: "It is too early for the act to have had much effect on natural gas reserves. But major producers surveyed increased exploration and drilling as the prices of both natural gas and oil increased. Production increased 1.6 percent in 1979 and available supplies appear adequate. Proven reserves continued to decrease in 1979, but at a slightly slower pace." Recent data demonstrate that a flurry of drilling activity has resulted from the NGPA. If 1979 reflects a trend, then some increases in natural gas production from conventional sources can be expected.

3.087

Natural gas reserves from conventional sources in the United States continue to decline. The American Gas Association (AGA) 1980 report addresses this issue. The report (page 7) states: "Twenty years of steady growth in the proved reserves occurred up to 1967, at which time the reserves were 292.9 TCF. Since that peak year, annual production has been larger than annual reserve additions. As a consequence, reserves have declined. The only exception to that trend was 1970, the year Prudhoe Bay field reserves were added. At year-end 1979, proved reserves had declined to 194.9 TCF. . . . Since 1973, annual records have been set each year for gas well completions and successful gas well footage drilled. . . . Despite the intense drilling activity since 1973, reserve additions have not recovered to the levels of the early 1960s." According to the AGA, gas reserves continue to decline despite record drilling activity because of extensive drilling in exploited areas. The report notes: "Recent studies have investigated in detail the apparently contradictory relationship among the very high potential gas estimates, the low reserves additions and the record level gas well drilling. Intuitively, one would conclude that with the record level drilling and the gigantic potential, very large volumes of gas would be discovered. Information reviewed by the workshop, however, revealed that this has not happened. Most of the drilling has been directed at already extensively exploited resources which, consequently, have little promise for new 'giant discoveries.' Approximately 90 percent of the gas well completions are in regions thought to contain only 30 percent of the remaining resources. Therefore a significant increase in reserve additions is not likely to occur until the drilling activity is more oriented toward the frontier areas" (Am. Gas Assoc. 1980--pages 7-8).

3.088

Most natural gas projections forecast that the United States can meet its demands for natural gas. Projections, however, often differ substantially in the amount of gas that can be produced, and most forecasts are based upon important underlying assumptions.

3.089

The American Gas Association's 1980 report presents a favorable outlook for gas supply over the next 20 years. The AGA report indicates that sufficient gas will be available in the year 2000 to continue to supply at least 25 percent of the nation's total need for energy. "Although projected volumes of gas supply in 2000 vary with one's assumptions about future technical, social, economic and political conditions, it is reasonable to expect that a range of between 23 and 33 TCF of annual gas production can be available in the year 2000" (Am. Gas Assoc. 1980--page 2). The report (page 47) concludes that, even under different supply scenarios, the available gas supply for the year 2000 is in excess of 23.1 TCF. This amount, compared to the 197^o actual supply of 21.3 TCF, represents an eight percent increase in gas supply. Supply sources of supplemental gas for the year 2000 as projected by the AGA are presented in Table 1; a breakdown for specific years is shown in Table 2.

3.090

The Energy Information Administration (EIA) 1981 report is a comprehensive study of U.S. energy supply-demand. Forecasts for natural gas (and other energy resources) are presented for two time periods: a mid-term forecast for the years 1985, 1990, and 1995; and a long-term forecast for the years 2000, 2010, and 2020. The mid-term projection for 1990 of 17.4 TCF shows a decline in production from 1985 (Table 3). This differs substantially from AGA's forecasts of 23.5 TCF for 1990 and continued increases in gas production for this period.

3.091

In its 1981 report, the Energy Information Administration also compares its supply forecasts with six other organizations for 1990 (Table 4). It is significant to note that the EIA 1990 projection of 17.4 TCF is among the lowest of all these forecasts.

3.092

The long-term supply and demand forecasts of EIA are presented in Table 5. A decline in demand is projected for high-Btu gas during the forecast period, "primarily because of the increased use of synthetic low and medium-Btu gas in central electricity generation and in industry" (Energy Inf. Admin. 1981--page 172). It is also important to note that the forecasts show a significant decline in the supply of natural gas during the same forecast period. "Total supply of high-Btu gas is projected to decline steadily from 1978 to 2020 at a rate of about 0.8 percent annually. The decline of lower 48 production is substantially offset by the projected growth of enhanced gas recovery. Production from Alaska, after completion of the pipeline from the North Slope - expected by 1990 - also supports domestic output. After 2000, the projected growth of high-Btu gas from coal is the primary compensating factor" (Energy Inf. Admin. 1981--page 172). It is significant to note that EIA's supply projection of 17.5 TCF for 2000 differs substantially from AGA's supply forecast of 31.0 TCF for the same time period.

Table 1. Gas Supply (in TCF) for the Year 2000^a

	Self Sufficiency	North American Focus	Moderate World Imports	World Conventional Gas Emphasis
Lower-48 states	12-14	12-14	12-14	12-14
SNG	0.3	0.3	0.3	0.1
Alaska	3.0	3.0	1.5	3.0
Canada	1.0	2.0	2.0	2.0
Mexico	0.1	2.0	2.0	2.0
LNG	0.7	0.7	2.5	4.0
Coal gas	3.5	3.5	1.5-2.5	1.5-2.5
Tight formations	1.5-5.0	1.5-4.0	1.5-3.0	1.5-3.0
Unconventional	1.0-2.5	1.0-2.5	1.0-2.5	1.0-2.5
Total Supply	23.1-31.0	26.0-32.0	24.3-30.3	27.1-33.1

^aSource: American Gas Association (1980--page 3).

Table 2. Breakdown of Self-Sufficiency Gas Supply
(in TCF) for the Years 1979, 1990, and 2000^a

	1979	1990	2000
Lower-48 states	19.9	15-17	12-14
SNG	0.2	0.3	0.3
Alaska	-	1.4	3.0
Canada	1.0	1.0	1.0
Mexico	-	0.1	0.1
LNG	0.2	0.7	0.7
Coal gas	-	1.0	3.5
Tight formations	-	0.4-1.4	1.5-5.0
Unconventional	-	0.2-0.6	1.0-2.5
Total Supply	21.3	20.1-23.5	23.1-30.1

^aSource: American Gas Association (1980--page 44).

Table 3. Natural Gas Production and Consumption (in TCF/yr): History and Projections for the Middle Oil Price Scenario, 1965-1995^a

	History			Projections		
	1965	1973	1978	1985	1990	1995
Domestic Production:						
Conventional						
Associated and dissolved	NA	NA	NA	1.9	1.8	1.8
Nonassociated	NA	NA	NA	13.9	11.5	10.1
Subtotal	15.3	21.5	18.9	15.8	13.3	11.9
North Alaska	0	0	0	0	0.9	0.9
Unconventional	(b)	(b)	(b)	0.7	1.3	2.2
Synthetic gas						
High-Btu coal gas	0	0	0	0.1	0.1	0.1
Medium-Btu coal gas	0	0	0	<0.05	0.8	1.1
From petroleum	0	<0.05	0.3	0	0	0
Subtotal, Domestic Production	15.3	21.5	19.1	16.6	16.4	16.2
Net Natural Gas Imports:						
Canadian gas	0.4	1.0	0.9	0.6	0.1	<0.05
Mexican gas	<0.05	<0.05	0	0.1	0.1	0.1
Liquefied natural gas	0	<0.05	<0.05	0.8	0.8	0.8
Subtotal, Imports	0.4	1.0	0.9	1.5	1.0	0.9
Total Supply	15.7	22.5	20.0	18.1	17.4	17.0
Consumption:						
Residential	4.1	5.0	5.0	4.8	5.0	4.9
Commercial	1.4	2.3	2.3	2.3	2.5	2.7
Raw material	0.6	0.8	0.6	0.8	1.0	1.2
Large boilers	(c)	(c)	(c)	1.5	0.7	0.6
Industrial, other	6.6	9.3	7.7	5.1	6.2	6.3
Refinery	(c)	(c)	(c)	1.0	1.0	0.9
Electric utility	2.3	3.6	3.2	2.2	0.6	0
Pipeline fuel and loss	0.5	0.7	0.5	0.4	0.5	0.4
Total Consumption	15.3	21.8	19.4	18.1	17.4	17.0

^aSource: Energy Information Administration (1981--page 88).

^bIncluded in "Conventional" category.

^cIncluded in "Industrial, other" category.

NA = not available.

Table 4. Projections of Natural Gas Supply (quadrillion Btu):
Comparison of 1990 Forecasts^a

Units	1990 Projections									
	EIA				AGA ^b	DRI ^c	Bankers Trust ^d	Exxon ^e	Policy and Evaluation ^f	Shell ^g
	1978 Actual	1978 Annual Report C-High	1979 Annual Report Middle	1980 Annual Report Middle						
Domestic Production:										
Conventional	19.5	17.4	17.8	14.2	15.4-17.6	16.6	16.7	15.7	16.7	14.3
North Alaska	(h)	0.9	0.9	0.8	0.7-1.1	0.4	0.9	NA	1.3	0.8
Synthetic gas	0.2	0.5	0.3	0.9	0.9-3.8	0.5	0.4	NA	0.4	1.0
Subtotal	19.7	18.8	19.0	15.9	17.0-22.5	17.5	18.0	15.7	18.4	16.1
Net Imports:										
Pipeline	0.9	0.3	0	0.2	1.1-2.7	2.1	NA	NA	NA	0.6
Liquefied natural gas	<0.05	0.6	0.8	0.7	0.7-2.0	1.0	NA	NA	NA	0.7
Subtotal	0.9	0.9	0.8	1.0	1.8-4.7	3.1	2.7	2.1	2.8	1.3
Total Supply	20.6	19.7	19.8	16.9	18.9-27.3	20.6	20.7	17.8	21.2	17.4

^aSource: Energy Information Administration (1981--page 112). Non-EIA projections are converted from trillion cubic feet at 1,020 Btu per cubic foot unless otherwise indicated. Numbers may not add to totals because of rounding.

^bAmerican Gas Association, "The Gas Energy Supply Outlook: 1980-2000," October 1980.

^cData Resources, Inc., "Energy Review," Autumn 1980.

^dBankers Trust Company, "U.S. Energy and Capital Forecast, 1980-90," Summer 1980. Excludes unconventional recovery and synthetics.

^eExxon Company, U.S.A., "Energy Outlook 1980-2010," December 1980.

^fPolicy and Evaluation, U.S. Department of Energy, "Reducing U.S. Oil Vulnerability," November 1980. Values converted at a rate of 1,025 Btu per square foot.

^gShell Oil Company, "National Energy Outlook," November 1980.

^hIncluded in "Conventional" category.

NA = not available.

3.093

Natural gas supply forecasts are based upon important underlying assumptions. As conventional sources of natural gas decline (Table 6), the major assumptions are concerned with supplemental or unconventional supplies of gas. Unconventional sources are high-Btu gas from coal gasification, land-based tight sands, geopressured aquifers, etc. These sources require long lead times to develop and enormous investments of capital; they are not short-term, or perhaps even mid-term, solutions to U.S. natural gas needs. The AGA discusses the increasingly important role of unconventional sources of natural gas in its 1980 report (page 13): "First, conventional lower 48 natural gas production will indeed decline, perhaps more slowly at first--or even stay level--for some years as the NGPA incentives stimulate gas production in some of the less accessible areas. However, if the gas industry is to maintain its current market share of 26 percent of U.S. energy consumption for the foreseeable future--and I think that is the best alternative our country has--then it is clear that conventional gas supplies will not be adequate. Most projections of gas supplies during the rest of this century generally contain a 'wedge' of non-traditional supplemental supplies laid across the top of declining future conventional supplies. The crux of the gas supply issue is

Table 5. Gaseous Fuels Supply/Disposition Summary (quadrillion Btu/yr):
Low, Middle, High World Oil Price Projection Series^a

		2000			2010			2020		
	1978	Low	Mid	High	Low	Mid	High	Low	Mid	High
<u>Supply</u>										
Conventional natural gas										
Lower-48 states	18.4	10.1	10.7	10.7	7.3	7.2	7.2	4.5	4.0	3.8
Alaska	0.2	1.3	1.3	1.3	1.5	1.5	1.5	1.9	1.8	1.7
Enhanced gas recovery	0.9	5.6	4.7	3.8	7.0	6.6	5.6	7.6	7.7	7.5
Synthetic gas, high-Btu	0	0.2	0.3	0.4	0.7	0.7	0.8	1.3	1.2	1.1
Total Domestic Production	19.5	17.2	17.0	16.1	16.4	16.0	15.1	15.2	14.7	14.1
Net Gas Imports	0.9	1.0	0.6	0.6	0.4	0.2	0.2	0.1	0.1	0.1
Total Gas Supply	20.4	18.2	17.5	16.7	16.8	16.2	15.3	15.3	14.8	14.2
<u>Disposition</u>										
Residential	5.2	5.1	5.1	5.1	4.7	4.8	4.8	4.3	4.4	4.5
Commercial	2.4	3.0	3.1	3.0	2.6	2.7	2.7	2.3	2.4	2.5
Industrial	8.5	9.5	8.8	8.1	8.8	8.4	7.3	8.1	7.4	6.7
Pipeline transmission	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5
Electricity generation	3.3	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Gas Demand	20.0	18.2	17.5	16.7	16.8	16.2	15.3	15.3	14.8	14.2

^aSource: Energy Information Administration (1981--page 174).

Table 6. Conventional Lower-48
Supply Projections^a

Year	Supply (TCF/yr)
1985	16-18
1990	15-17
1995	13.5-15.5
2000	12-14

^aSource: American Gas Association
(1980--page 6).

how large must this wedge be in future years, and how soon various supplementals in the wedge must come into the picture to meet gas market demands, let alone to seek new markets." This "wedge" of "supplemental sources of gas (i.e., those sources other than conventional lower 48 production) currently provides less than seven percent of the total U.S. gas supply. However, this percentage will steadily increase over the next 20 years. By the year 2000, supplemental sources are expected to contribute from 40 to 60 percent of the total supply" (Am. Gas Assoc. 1980--page 2). Supplemental sources of natural gas and projected supplies as forecast by the AGA are presented in Table 2. It is obvious that the "wedge" of supplemental gas in future years is enormous. "The capital acquisition and financial program to be undertaken is consequently enormous as well" (Am. Gas Assoc. 1980--page 13).

3.094

In summary, the short-term demand for natural gas will have to be met by conventional supply sources. Gas supply projections do not indicate which conventional sources will have to be developed; rather they imply that all available conventional sources will have to be utilized. Natural gas supply projections also reveal a continued decline in production from lower-48 conventional supplies. In the mid- or long-term period, increasing volumes of natural gas will have to come from unconventional sources. Due to the long lead times and large financial investments necessary to develop unconventional sources of natural gas, it is not realistic to assume that these sources are immediate answers to supply problems. Natural gas supply projections are primarily based upon important assumptions regarding unconventional supplies. If some of the assumptions prove to be false and as conventional reserves continue to decline, shortfalls of gas could occur. Such events could have adverse economic impacts upon gas-intensive regions of the United States, could affect end-user confidence in the gas industry, and could delay U.S. efforts to achieve a significant measure of energy independence.

TOPICAL RESPONSE NUMBER 13

Waste Disposal

3.095

Several comments were received that asked for clarification of waste disposal activities.

Response

3.096

Clarification of waste disposal activities requires a brief discussion of the revised Resource Conservation and Recovery Act (RCRA) regulations promulgated May 19, 1980 (45 FR 33066 et seq.). The special waste category has been eliminated, but drilling muds are not exempt from the provisions of RCRA. It is true that the revised regulations in 40 CFR 261.4(b)(5) exclude drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of natural gas from the hazardous waste category of RCRA. Such wastes are thus not subject to the Subtitle C regulations for Hazardous Waste Management, e.g., "cradle-to-grave" monitoring. This exclusion was prompted by congressional amendments to RCRA that (as described in the May 18, 1979, Environment Reporter) provide for a study of these wastes in order to ascertain their degree of hazard, if any [see also 40 CFR 26 (111)(E)]

in 45 FR 33089)). If these wastes are deemed to be nonhazardous in the RCRA sense upon completion of this study, they would still be subject to guidelines under Subtitle D of RCRA (Section 4004), which provide criteria for environmentally acceptable disposal facilities. Also, monitoring or regulation of any toxic additives is suggested as part of the Reference Program (paragraph 1.116).

3.097

Requirements and procedures to ensure proper handling, treatment, and disposal of residuals generated and materials used are outlined in the Reference Program. Appendix D of the DEIS indicates that the operators would be required to provide the strategy for waste handling to the agencies and that monitoring would be required. The environmental effects associated with the Reference Program are also presented.

3.098

The requirements of RCRA regulations and the Safe Drinking Water Act would also apply to disposal activities. Proper solid and liquid waste-disposal sites can be determined only during site-specific/proposal-specific analyses. There is admittedly a shortage of both sanitary landfills and RCRA hazardous waste-disposal sites in the region adjacent to the Lake (and nationwide, as well). Possible suitable host formations for underground injection and the criteria for hazardous waste disposal according to current interpretation of RCRA requirements are discussed in the DEIS (see paragraphs 1.102 to 1.130 and Tables 1-11, 1-12, and 1-32).

LETTERS OF COMMENT AND RESPONSES

3.099

Following are copies or verbatim retyped copies of the letters of comment received during the DEIS review period and, where appropriate, responses to the comments.



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

REGION V
120 SOUTH DEARBORN ST
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION 113

Colonel George P. Johnson
District Engineer
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14202

15 JAN 1981

RE: 80-049-1113
D-COE-FO2001-00

Dear Colonel Johnson:

We have completed our review of the Draft Environmental Impact Statement (EIS) for the U.S. Lake Erie Natural Gas Resource Development. This Draft EIS addressed the environmental consequences of natural gas resource development in the Eastern and Central basins of U.S. Lake Erie. The Draft EIS did not make any judgement related to individual permit applications or the issuance or denial of any such permit, but rather addressed natural gas development in a generic sense.

The EIS describes a Reference Program which defines the proposed activities and the conditions and permit requirements which will be applied once a formal application is made. The establishment of a regulatory task force is recommended to develop the standard lease forms, drilling permit forms, and construction and operation permit forms, and recommend minimal Federal standards. Based upon the information provided in the Draft EIS and the conditions, constraints, mitigation measures, restriction of use in certain areas, method of waste handling, etc. which will be applied, we do not have any major objections to the Reference Program. We are concerned, however, about the potential impacts that could occur locally from specific facilities, but understand that assessment of significant localized impacts through a generic EIS is not practical. Under the COE's regulations for implementing the National Environmental Policy Act, an EIS decision must be made for each permit. Considering the scope and the potential impacts of any gas development activities, we recommend an EIS be prepared for all future projects until criteria can be substantiated which will provide adequate environmental protection.

Based upon our review of this Draft EIS, we have rated the project as LD (Lack of Objection) and classified the EIS as Category 2 (Additional Information Necessary). Our detailed comments are attached. The date and classification of our comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on other agency's projects.

be afforded the opportunity to review this Draft CII. If you have any comments, please forward them to the attention of William S. Fries at 117/ Sherman at 175 4th Ave., when the final CII is required with illustrations. Please send in four copies.

Sincerely yours,

John F. Foy

Barbara J. Taylor, Clerk
Anti-Communist Impact Bureau Staff
Office of Confidential Action

cc: [illegible]

U.S. ENVIRONMENTAL PROTECTION AGENCY'S COMMENTS ON THE
DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR U.S. LAKE
LAKE NATURAL GAS RESOURCE DEVELOPMENT

EPA-1

The Environmental Impact Statement (EIS) has been written in the absence of a specific project proposal. The Reference Program contains a set of guidelines incorporating state-of-the-art technologies and strict operational procedures designed to minimize possible releases to the environment. While the EIS, through the Reference Program, attempts to minimize the environmental impacts, in a generic sense there will be some adverse impacts which will be contingent on the particular areas selected for individual facilities. There are 14 lease areas, and 10 landfall areas in the Central and Eastern Lake Erie basin where natural gas development is proposed. The specific impacts which could possibly occur from a particular development cannot be, and have not been, addressed in this EIS. Depending upon the location of the wells, the flow pipelines, shore-line facilities, gas production facilities, and waste disposal sites, the environmental impacts could be significant. Based upon these considerations, we envision that an EIS would be necessary for any gas development due to the potential localized primary and secondary impacts of any such project.

Disposal of Drilling and Stimulation Fluids and Other Wastes

The Reference Program requires drilling fluids, stimulation fluids, and residuals to be collected, stored, and relegated to land disposal sites whenever possible. The EIS should define the circumstances when collection, storage, and land disposal will not occur. The type of on-land disposal sites necessary and their locations must be determined prior to individual natural gas development. Should land disposal not occur and open water disposal be considered, then the proposal must be re-evaluated with a view toward defining the fate and effect of discharged materials.

EPA-2

EPA-3

During the drilling and stimulation processes, there is the potential for the generation of hazardous wastes. Applicants for gas development should be aware that materials are considered hazardous if they contain wastes which are defined by the Hazardous Waste and Consolidated Permit Regulations found in the May 19, 1980 Federal Register, book 2 of 3, pages 33063 to 33285. Materials are considered to be hazardous if they contain wastes listed in 40 CFR Part 261, Subpart D or if they exhibit the characteristics of corrosivity, reactivity, ignitability, or P. toxicity, as defined in the above regulations. The EIS stated that periodic monitoring would be done to assure that wastes would be disposed of in a proper manner. If the materials are determined to be, or are designated, hazardous they will then have to be transported, stored, and disposed in a manner consistent with the above regulations. We offer our assistance in determining the applicability of the Hazardous Waste and Consolidated Permit Regulations to natural gas drilling in Lake Erie.

EPA-1

As indicated in paragraph two of the USEPA cover letter, the Corps of Engineers must make a determination for each permit application concerning the need for an Environmental Impact Statement (EIS). In each case, after review of the specific proposal and its potential effects, the Corps must determine whether or not issuance of a permit would constitute a Major Federal Action Significantly Affecting the Quality of the Human Environment. These determinations would be made in accordance with Corps regulations implementing the National Environmental Policy Act of 1969 (NEPA; 33 CFR 230) and Council on Environmental Quality regulations 40 CFR parts 1500-1508. A reasoned judgment concerning the need for an EIS can best be made when proposal-specific and site-specific information is available and a preliminary analysis of potential effects of permit issuance is made. In this regard, the Corps District Engineer may request any information deemed necessary to make his determination on a particular application. Although the programmatic DEIS cannot assess all site-specific and proposal-specific effects, the need for this type of information, in itself, would not warrant preparation of an EIS since the necessary data can be generated by other means. Based on the analysis contained in the DEIS, many of the impacts are expected to be temporary, minor, highly localized, and mitigable. Thus, depending on the scope of a proposal and additional information on specific proposed sites, the effects on the quality of the human environment may not be significant in all cases. Rather than predetermine the necessity of an EIS for all future cases, the Corps proposes to await specific proposals from operators and make the appropriate NEPA determinations in accordance with 33 CFR 230 and 40 CFR 1500-1508. The USEPA regional offices along with other agencies and the general public would be notified of determinations made on each application and would be afforded the opportunity to comment.

In cases that do not warrant preparation of an EIS, the District Engineer would announce that a preliminary determination has been made not to prepare an EIS. A final decision concerning the necessity of an EIS would not be made until after the public review period was completed and an environmental assessment had been prepared. The District Engineer could reverse his original preliminary determination if the results of the public review or the results of the environmental assessment indicated that reversal of the decision was necessary. Thus, even in those cases where an EIS was not required, the public and agencies would be advised of the proposal and given the opportunity to comment, and an environmental assessment would be prepared. We currently foresee that proposals could fall under one of the following NEPA requirements, depending on the impact and scope of the proposal: preparation of an EIS specific to that proposal; preparation of a site-specific and/or proposal-specific supplement to the programmatic EIS; or preparation of a detailed environmental assessment. Thus, although we do not believe that a predetermination of EIS necessity for all future cases is currently warranted, we will ensure that all applications are reviewed in accordance with NEPA.

There are actually sixteen lease areas. Lease Area XV is Lease Area XIV drilled deeper for Clinton-Medina, and Lease Area XVI is Lease Area XIII drilled deeper for Clinton-Medina. See Table 1-1B of the DEIS for clarification of the lease areas.

EPA-2

The USEPA is probably referring to paragraph 1.102. The circumstances under which collection, storage, and land disposal will not occur during normal operations are presented in Table 1-25.

EPA-3

Comment noted.

- EPA-4 { The EIS mentions (Section 1.122, page 1-45) that there are a limited number of Resource Conservation and Recovery Act landfills in the Reference Program Study region. We would like to elaborate upon this point by stating that the only site in the State of Ohio presently classified as suitable for such disposal is located in Cincinnati, Ohio.
- EPA-5 { The EIS also states that solid sludges produced at on-shore treatment/disposal facilities are likely to be hazardous and should go to a Resource Conservation and Recovery Act permitted landfill. An alternative discussed in the EIS suggests the use of on-land dredged spoil disposal sites, instead of Resource Conservation and Recovery Act permitted hazardous waste management facilities. These sites would not be acceptable for the disposal of hazardous wastes.
- EPA-6 { Impacts Upon Water Quality Due to Accidents
Table 4-5 categorizes the impacts of all accidents. Accidents can vary from those occurring during construction activities, e.g., drilling rigs capsizing, to those occurring during operations, e.g., a pipeline rupturing from an anchor dragging along the bottom. The categorization of the impacts in Table 4-5 indicates these impacts will be moderate and localized. The substantiation for this determination should be included in the Final EIS. The fate and effects of pollutants should be assessed to determine if the impacts are moderate and localized.
- EPA-7 { Table 1-35 and Appendix paragraph C.008 describe the flowline rupture as a moderate-frequency accident. (Although paragraph 4.067 states that the possibility of rupture from dragging anchors appears minimal). It appears that the consequences of such an accident (as described in Table 1-35 and appendix paragraph C.008) could be severe, and the severity and probability appears to be greater for this type of accident than for most others. The applicant should be required to develop contingencies to prevent such accidents from occurring and to minimize the impacts, if they do occur.
- EPA-8 { Worst-case assumptions in paragraph C.008 state that the pressure drop after a flowline rupture may go undetected for up to 24 hours. Is there any way in which state-of-the-art flowline monitoring can ensure earlier detection and action? It is also assumed in this paragraph that if the safety valve fails to actuate, it may take up to three days to stop the flow of gas by repairing the break. Will there be a way to manually actuate the safety valve or other valves to stop the flow of gas immediately?
- EPA-9 { Air Quality
On-land processing facilities will undoubtedly have an impact upon air quality. The entire Ohio Lake Erie basin is nonattainment for ozone and portions of Erie, Lorain, Cuyahoga and Lake Counties are nonattainment for sulfur oxides. In order to construct processing facilities in these areas, emission offsets may be necessary in order to comply with the State Implementation Plan. The state new source permitting authority should be contacted in regard to the need to apply for emission offsets.

- EPA-4 See Topical Response Number 13 on Waste Disposal.
- EPA-5 In paragraphs 1.115 and 1.116, it is noted that the nature of the drilling fluid additives is unknown, often because of the proprietary nature of these formulations, but it is suggested that periodic monitoring or strict regulation of toxic additives be made part of the Reference Program. Monitoring and disclosure requirements and restrictions on the use of hazardous additives may obviate the necessity to dispose of these wastes in a hazardous waste disposal facility. [Note that the revised RCRA regulations, namely 40 CFR 261.4(b)(5), specifically exclude these wastes from the hazardous waste designation at the federal level. However, the states may impose more stringent requirements. A waste may be nonhazardous under RCRA and still pose an environmental hazard in a site-specific circumstance.]
- EPA-6 The characterization of impacts listed in Tables 4-3 to 4-5 is based upon the examination of estimated concentrations at the release point and 0.5 mile down-current of the release point, and upon comparison of the latter concentrations with drinking water standards and criteria for freshwater aquatic life. An impact is characterized as localized if it declined rapidly in magnitude with downcurrent distance, and characterized as moderate or minor if its potential for impact on drinking water quality and biological communities is considered small. Based on these criteria, all program-related releases (routine or accidental) were found to have either minor, minor and localized, or moderate and localized impacts on water quality. Thus, impacts on water supplies, aquatic biota, recreation, and other lake resources should be at most localized and moderate, except for the immediate release area (paragraphs 4.057 and 4.061). Away from the immediate release point and on a lakewide basis, impacts should be minor. Program-related accidents have a low frequency of occurrence. Thus, the potential for significant synergistic effects from simultaneous accidents is extremely remote. Potential impacts will be further evaluated on a site-specific basis.
- EPA-7 Paragraph 4.067 should state: "The likelihood of a gas well or pipeline being snagged and broken by an anchor appears moderate. Any applicant should be required to develop contingencies to prevent such accidents from occurring and to minimize the impacts, if they do occur. Wells ..." (remainder of paragraph, as is). See Topical Response Number 7 on Contingency Plans and Cleanups.
- EPA-8 There are ways to ensure earlier detection. The easiest method would be to install pressure and rate sensors in the flowlines at the plant. These sensors would in turn be coupled to alarms that would have remote alert stations where someone could continuously monitor the alarms for the first sign of trouble. Once the problem was located, the proper personnel would be alerted and steps would be taken to cure the problem immediately. Add to the end of paragraph D.040:
- State-of-the-art detection and alarm systems must be used at processing plants to continuously monitor for underwater pipeline breaks.
- In response to the question about automatic safety-valve failures, the easiest solution would be to install manual safety valves in tandem with the automatic valves. This would ensure that the gas flow could be stopped before the three-day limit set forth in the DEIS. However, even manual valves fail sometimes, so the "worst-case" assumption presented for assessment purposes is still valid.
- EPA-9 Comment noted. Violations of the standards for ozone and sulfur oxide standards in Ohio were noted in paragraph 3.100. Ashkabula, Cuyahoga, Erie, Geauga, Lake, and Lorain counties have been designated nonattainment for ozone; parts of Cuyahoga, Erie, Lake, and Lorain counties are nonattainment for sulfur oxides. In addition, Erie County, Pennsylvania, is designated nonattainment for suspended particulates.

EPA-9

Prior to construction of facilities that could add to ambient concentrations of pollutants which are nonattainment, emission offsets may be required to meet State Implementation Plans. An example is the treatment plants mentioned in paragraph 4.122. In such a case, the state now source permitting authority should be contacted in regard to the need to apply for emission offsets.

EPA-10

Insert after the third sentence of paragraph 1.071 as follows: "The Corps notifies the USEPA by public notice of those permit activities requiring a water Quality Certification. Where a discharge from one state may affect the water quality of another state, the Administrator of USEPA must notify the affected state. The state that may be affected by the proposed discharge then has the opportunity to comment on the 401 certification."

EPA-11

As indicated in Topical Response Number 3, the Task Force is not a regulatory agency but rather a voluntary coordinating body established to perform various administrative and advisory tasks related to regulations. These tasks--such as drafting permit forms, keeping track of administrative progress of the program, types of functions generally associated with public involvement in regulatory matters. We agree that the Task Force, if eventually established, should consider obtaining input from the general public and potential applicants and should consider public review of any reports it may publish that would affect the general public interest. At this point in time, a decision on the environmental acceptability of gas drilling in Lake Erie has not been made, even in principle, nor is there any indication that the recommended Task Force will become a reality.

However, any recommendations made by the Task Force would have to be implemented or carried out by the appropriate state or federal regulatory agency or legislative body. During these stages of implementation, the regulatory agencies or legislative bodies would utilize the public involvement procedures that they are required to perform by regulation or state law. Public involvement procedures would differ depending on which state or federal agency was the designated action agency and whether or not legislation was involved. In regard to any changes in the minimum federal guidelines as contained in this EIS, public involvement with the Corps and/or USEPA would be utilized.

EPA-12

The need for dredging would be affected by the selection and use of the harbor and the harbor's historical maintenance requirements. At the current programmatic stage of development, there is no way to estimate the harbors to be dredged, the amount of dredging, or the pollution classification at the dredging site. However, Buffalo, Erie, and Cleveland were identified as likely candidates in the DEIS (paragraph 4.065). It is unlikely that the depth of the Federal Channel will have to be increased, nor is there any expected increase in frequency of dredging. However, dredging in these areas is covered under the permit requirements of Section 10 of the River and Harbor Act of 1899. Standard procedure used by the Buffalo District Corps of Engineers for major dredging projects in these Lake Erie harbors includes consultation with USEPA regional offices to determine the necessity for sediment testing, the type of testing required, and the testing locations. On a site-specific basis, thorough evaluation and interagency coordination would occur during permit application review.

EPA-13

The intention of paragraph 1.069 was the review of Corps permit applications by the USEPA regional offices. We did not mean to imply that Headquarters would review the applications. The section responsible for such reviews in the various regional offices was at one time called the Office of Federal Activities.

-3-

Additional Comments

EPA-10 It should be noted that where a discharge from one state may affect the water quality of another state, our Agency must notify the affected state. This state then has the opportunity to comment on the 401 certification.

EPA-11 One of the goals of the Reference Program is to establish a Regulatory Task Force. This Regulatory Task Force would be composed of Federal agencies and the three states involved, and would be responsible for the development of the standard permit form, drilling permit form, and construction and operation permit form. In addition, a minimum set of standards to guide offshore Lake Erie natural gas development activities would be developed by the Regulatory Task Force. The EIS should describe the public involvement in the Regulatory Task Force process. While it may not be advantageous to have members of the public participate in the Task Force meeting, the public should have the opportunity to review and comment on the Task Force's recommendations.

EPA-12 The EIS indicated there was a potential for additional dredging at several harbors on Lake Erie. The Final EIS should provide information on which harbors may have to be dredged, an estimation of the quantity of material to be dredged, and the pollutional classification of this material.

EPA-13 The following procedural point is noted: the EIS indicates (1.069) that EPA reviews of Section 10 and 404 permit applications will be carried out by the Office of Federal Activities. This appears to be an incorrect reference to the Office of Environmental Review, Headquarters; but more appropriately, the EIS should indicate that case permit reviews will be conducted by the regional staff responsible for 404 program administration.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

WASHINGTON, D.C. 20591
OFFICE OF THE ATTORNEY GENERAL
WASHINGTON, D.C. 20540



November 21, 1980

Col. George P. Johnson
District Engineer
Regulatory Functions Branch
Federal Aviation Administration
Aedra District, Corps of Engineers
1776 Michigan Street
Berkeley, New York 14007

Dear Colonel Johnson:

FAA-1 The FAA Eastern Region has no comment on the Draft Programmatic
Environmental Statement entitled, "U.S. Lake Erie Natural Gas
Resource Development."

Sincerely,

James A. Calkins

LOUIS ARBITORE
Senior Assistant and Environmental Officer

FAA-1 NO RESPONSE REQUIRED.



United States
Department of
Agriculture

Soil
Conservation
Service

200 North High Street
Room 522
Columbus, Ohio 43215

December 9, 1980

Colonel George P. Johnson
District Engineer
District Engineer District, Buffalo
1734 Army Engineer District, Buffalo
Buffalo, New York 14207

Dear Colonel Johnson:

The Draft Programmatic Environmental Impact Statement for
U.S. Soil Conservation Service District Engineer District, Buffalo
the USDA Soil Conservation Service State Conservationist,
Columbus, Ohio, for review and comment.

1050-1 No response required.

We have reviewed the Draft Statement and have no comments to
make. We appreciate the opportunity to review and comment
on this gas turbine development.

Sincerely,

Robert R. Shaw
Robert R. Shaw
State Conservationist



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20545

DEC 1 - 1980

Mr. George P. Johnson, Colonel
Corps of Engineers
District Engineer
Department of the Army
Buffalo District
1775 Niagara Street
Buffalo, New York 14207

Dear Mr. Johnson:

This is in response to your request for comments on the Draft Programmatic Environmental Impact Statement entitled "U.S. Lake Erie Natural Gas Pipeline Development."

We have reviewed the impact statement and determined that the proposed action will have no adverse radiological health and safety impact, nor will it adversely affect any activities or interests of the State of New York or the Division. However, we would like to be informed and consulted before any final decisions are made regarding the proposed action. We are currently conducting an exploratory drilling program in the Lake Erie area, and we are currently located at Lake Erie in Lake County, Ohio.

Thank you for providing us with the opportunity to review this draft of the Programmatic Environmental Impact Statement.

Sincerely,

Samuel R. Maltz
Daniel R. Maltz, Assistant Director
for Environmental Technology
Division of Engineering

NRC-1

The statement concerning radiological health and safety impacts and the effects of U.S. nuclear development on the environment is acknowledged. Should the U.S. Lake Erie gas development ultimately be developed, it should be able in principle, the next step would be the review of any specific proposals received from operators. Operators would need Corps permits, and their application would be reviewed by the Corps. The Buffalo District will ensure that the NRC is notified of any proposal related to the development that is located within five miles of the Perry Nuclear Power Plant.



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
AREA OFFICE
100 WILMINGTON AVE. BUFFALO, N.Y. 14203
BUFFALO, NEW YORK 14203

December 12, 1980

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, D.C. 20540

IN COMPLIANCE WITH
2.155

District Engineer
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Attention: Regulatory Functions Branch

Subject: Draft Programmatic Environmental Impact Statement
U.S. Lake Erie Natural Gas Resource Development

Dear Sir:

Thank you for the opportunity to review subject document.

We share your concern for disposal of solid and liquid wastes that might be hazardous. Because conventional landfill sites and Resource Conservation and Recovery Act approved landfills are limited, our specific concern is that new disposal sites, not be located in proximity to MHB housing projects (existing or proposed).

Noise levels from continual compressor operation should be in accord with MHB Noise Guidelines if in proximity to MHB projects.

We have no other comments at this time but desire to remain on the mailing list as further environmental analysis of this major proposal takes place.

Sincerely,

F. R. L. L. L.
James F. Anderson
Area Manager

HUD-1

The Buffalo District would ensure that appropriate U.S. Department of Housing and Urban Development (HUD) offices are notified of specific gas development proposals to determine the proximity to HUD projects and to afford the opportunity for comment. On a programmatic level, it would be difficult to project noise impacts in more detail than contained in the DEIS.



U. S. DEPARTMENT OF TRANSPORTATION
REGISTRATION AND REGISTRATION ADMINISTRATION

New York Division Office
Lee O'Brien Federal Building
Clinton County Courthouse
Albany, New York 12207

December 17, 1969
SIR:

Col. George F. Johnson, District Engineer

Department of Transportation
100 West 10th Street
Buffalo, New York 14203

Attention: Regulatory Functions Branch

Dear Col. Johnson:

A copy of your Draft Programmatic Impact Statement entitled "U.S. Lake Erie Regional Gas Resource Development" was sent to the Regional Office for review and comment. The RIS was forwarded to the New York Division Office for action.

Please be advised that we have no comment on this document. However, we appreciate the opportunity to review it. In accordance with the requirement in our public notice we are returning the RIS unmarked for your subsequent use.

Sincerely yours,

[Signature]

F. K. Victor R. Taylor
Division Administrator

Enclosure

Enc.-1 To response needed. We appreciate your cooperation in our effort to recycle copies of the document.



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Center for Disease Control
Attn: George 20203
(404) 535-4449

January 5, 1981

Colonel George P. Johnson
Quartermaster Engineer
U.S. Army Corps of Engineers District, Buffalo
1774 Niagara Street
Buffalo, New York 14203

Attention: Regulatory Planning Branch

Dear Colonel Johnson:

We have reviewed the Draft Programmatic Environmental Impact Statement (EIS) for the U.S. Lake Erie Natural Gas Resource Development. We are responding on behalf of the U.S. Public Health Service and are offering the following comments for your consideration in preparing the final document.

We understand that the purpose of the subject EIS is to describe the environmental effects associated with the Reference Program and to provide guidance to the Corps and the U.S. Environmental Protection Agency in determining "...whether U.S. Lake Erie natural gas resource development can be: (1) approved as defined in the Reference Program, (2) approved as defined with qualifications, or (3) disapproved as unacceptable in principle."

In general, we have no major objections to any of the Reference Program guidelines that are designed to safeguard the environment. However, we believe the EIS should elaborate more on the health and safety impacts of the Reference Program. For example, Section 4.129 indicates that accidental gaseous releases from an explosion and/or fire at a gas treatment plant or from a pipeline rupture "...can have a potentially deleterious effect on the general public." The potential public health effects that might result from a worst-case accident of this type should be detailed. In addition, the ability of local building codes, zoning and setback regulations in the region to satisfactorily protect the general public (i.e., residents) from any accidents associated with gas flowlines and natural gas development facilities should be discussed.

The technical basis for prohibiting drilling and pipeline construction within .5 mile of a potable water intake in order to protect water quality and public health should be discussed. What research exists to justify the .5 mile designation?

HHS-1

Release and possible combustion or explosion of gas from a ruptured onland flowline or from a gas treatment plant is an event with low probability but high potential hazard. The effects of such an accident on human life and health would depend greatly on location and time of occurrence, as well as other circumstances. The risk of such an accident also exists for gas from onland wells, and is thus not unique to this program. The consequences of an under-water flowline rupture would likewise depend upon location, timing, and other circumstances.

The statement by Centers for Disease Control is correct; add the following item to paragraph 1.100 and paragraph D.042:

- Local building codes and zoning should be modified so placement of flowlines and gas facilities can be done not only to minimize land-use and water quality impacts and to be esthetic, but also to minimize loss of life in case of accident such as the explosion discussed in paragraph 4.129.

The discussion of the risk analysis and engineering considerations to implement that placement is beyond the scope of this document. Presumably gas companies take these precautions routinely.

HHS-3

The predominant direction of flow along the U.S. shoreline (central and eastern basins) is northeasterly, essentially parallel to the prevailing southwest winds and parallel to the shoreline (paragraphs 3.032 and 3.045). The dominant winds and currents further reduce the probability of spills reaching riparian areas.

New York leasing requirements prohibit drilling within 0.5 mile of a potable water intake. This requirement is recommended as a minimum for the entire development area.

In addition, a nearshore buffer zone of 1 mile (1600 m) has been recommended. With this zone, development activities would be sited lakeward of most potable water intakes (Table 3.3), thereby providing for a reaction time to spills before riparian interests are potentially impacted and also protecting fish spawning and nursery areas (paragraph 3.043). Several intakes are beyond the nearshore buffer zone, however, and development is restricted to a distance of at least 0.5 mile from any potable water intake. Liquid hydrocarbon spills would be concentrated at the water surface. Dispersion modeling (Appendix C) indicates that within 0.5 mile from the point of release, other chemical inputs (except hydrogen sulfide) from accidents (Table 4-5) or routine activities (Tables 4-3 and 4-4) would be within drinking water standards. The larger water treatment facilities have the ability to remove or reduce the concentration of potential contaminants associated with developmental activities (Table 3-5). Finally, the possibility of intake exposure can be further reduced by the permitting agency on a site-specific basis. See Topical Response Number 8 on Glycol Chlorination and Topical Response Number 9 on Water Supplies and Treatment Costs.

Page 2 - Colonel George F. Johnson

We appreciate the opportunity to review this RLS. Please send us one copy of the final document when it becomes available.

Sincerely yours,

Frank J. Macella
Frank J. Macella, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Group
Bureau of Public Services



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20540

ED-00/1160

JUN 7 1981

Colonel George P. Johnson,
District Engineer, Buffalo
Corps of Engineers
Department of the Army
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Johnson:

001-1 We have reviewed the draft programmatic environmental statement for U.S. Lake Erie Natural Gas Resource Development, sent to us on November 3, 1980. Based upon the information provided, the U.S. Fish and Wildlife Service does not anticipate objecting to the issuance of Department of the Army permits for offshore natural gas resource developments. However, we suggest that consultation with the Service be initiated early in the planning stages if it appears that Department of the Army permits will be required for any of the onshore facilities.

001-2 Most of the onshore Federal land in the area is under the jurisdiction of the Corps of Engineers and the Forest Service. As you are aware, mineral leasing for these agencies is managed by our Bureau of Land Management (BLM). A review of BLM records indicates that no significant Federally leased mineral extraction activities are occurring in the involved area. Consequently, no impacts, direct or indirect, to minerals leasing would occur. However, the current lease listing for oil and gas (attached) shows a substantial amount of oil and gas exploration in areas that are potential sites for the onshore portion of the Lake Erie Natural Gas Resource Development. Therefore, a comparison between the Lake Erie project and BLM's programmatic stipulations for oil and gas leases was performed, revealing a difference in road/pipeline right-of-way widths for onland access to well sites. BLM allows only a 20-foot width to minimize forest and wildlife impact. Conversely, the Lake Erie project suggests an overall right-of-way of 35-50 feet, including a 16-24 foot width for roads. A possible compromise is to allow the 16-24 foot width for road surface but reduce the overall right-of-way to 30 feet. This would minimize impacts but still allow heavy equipment access for pipeline construction and wellsite drilling. The other stipulations for road construction are comparable and thereby compatible.

001-1

Comment acknowledged. Should gas development in the U.S. Lake Erie be determined environmentally acceptable in principle, the Buffalo District would continue to coordinate with the U.S. Fish and Wildlife Service on an application-specific basis. The only potential for Corps regulatory involvement in onland development would be operations that involved the discharge of dredged or fill material into waters of the United States and their adjacent wetlands. We do not currently foresee any regulatory involvement in upland development of oil and gas.

001-2

Statement concerning ownership and mineral leasing of Federal land is noted. The discussion in the DEIS of onland gas development was provided to give a comparison of environmental impacts of onland vs. offshore development. There is no actual onshore portion of the Reference Program outside of pipelines from shore to processing and compressor stations and any facilities in harbors. Refer to topical Response Number 11 on the Onland Alternative Program, which provides a more detailed account of our reason for analyzing an onland program. The road widths and pipeline rights-of-way for the onland program were for the purpose of worst-case analyses. The Corps and USEPA have no regulatory control over these onland activities; however, we do concur that the Bureau of Land Management stipulations and recommendations result in minimal effect while still allowing for development.

201-3 One other significant contradiction in stipulations concerns burning refuse onsite. RMA stipulates that incineration is incompatible with overall waste disposal procedures. The usual method of waste disposal (sanitary and solid waste) is by trucking to authorized landfills and/or treatment facilities. The Lake Erie project would allow the incineration of some onsite refuse such as cement bags, paper product casings, etc. To comply procedures, an overall no-burn policy should be maintained. No-burn procedures would also reduce the risk, however slight, of onsite gas leak combustion.

Cultural Resources

201-4 The Corps of Engineers should maintain close consultation with the State Historic Preservation Officers in the affected States while the cultural resource study is being conducted. The State Historic Preservation Officers (SHPO's) should be afforded an opportunity to comment on the adequacy of the study and should be consulted on the development of any measures proposed to mitigate impacts to cultural resources. Results of this consultation should be included in the environmental statement along with results of the cultural resource study and any possible impacts and proposed mitigation measures.

The SHPO's for New York, Pennsylvania, and Ohio are Mr. Orin Lehman, Commissioner, Parks and Recreation, Agency Building #1, Empire State Plaza, Albany, New York 12231; Mr. Edward Weinstein, Executive Director, Historical Museum Commission, P.O. Box 1016, Harrisburg, Pennsylvania 17101; and Mr. Dallas Hinder, The Ohio Historical Society, Interstate 71 at 17th Avenue, Columbus, Ohio 43211.

Recreation Resources

201-5 The Statewide Comprehensive Outdoor Recreation Plans for New York, Pennsylvania and Ohio are cited in the reference section of Chapter 9, but are not discussed in conjunction with the recreational impact of this project. The Corps of Engineers should contact the responsible State officials to ascertain how activities such as recreational fishing, boating and shoreline resources would be affected. The State Liaison Officers for New York, Pennsylvania and Ohio are responsible for the formulation of the comprehensive plans and are, respectively, Mr. Orin Lehman, who is also the SHPO; Mr. Clifford Jones, Secretary of Environmental Resources, P.O. Box 1467, Harrisburg, Pennsylvania 17101; and Mr. Robert W. Teater, Director, Department of Natural Resources, Fountain Square, Columbus, Ohio 43224.

Accidents

201-6 We believe additional discussion regarding accidents involving oil and hazardous substances is needed. The potential environmental damages resulting from the hypothetical worst cases for exploratory well

201-3

Comment noted. This comment should be taken into consideration by the Task Force and/or appropriate permitting authorities. It should be noted, however, that air quality impacts in populated areas will be small because the volume of waste is small, and the rigs will be at least one mile from shore.

201-4

The Buffalo District will coordinate the cultural resources technical report with the State Historic Preservation Offices (SHPOs) in the three states and with the U.S. Department of the Interior. The Buffalo District will also consult with the SHPOs in accordance with Corps regulations 33 CFR 320-329 on an application-specific basis should gas development be determined environmentally acceptable in principle. Considering the programmatic nature of this DEIS, with impacts being addressed on a generic basis, consultation is best performed on specific applications when proposed locations and methods of work can be correlated with potentially sensitive historic and archeological sites. On a generic level, the cultural resource impacts are contained in the DEIS, Chapter Four, Chapter Three of the DEIS provides generic cultural resource information relative to the existing environmental setting. In a meeting held on 21 August 1978 in Washington, DC, between the Buffalo District Corps of Engineers and the Inter-agency Archeological Services group of the Heritage Conservation and Recreation Service (U.S. Department of the Interior), it was agreed that the following mitigative measures be provided:

- Where bottom anomalies are encountered, mitigation can be achieved by moving the drilling rig or pipeline a short distance away from the site of this potential resource. In such cases, the Heritage Conservation and Recreation Service (HCERS) indicated that the applicant would not be required to investigate the anomaly any further.
- Where the pipeline or drilling rig cannot be rerouted or moved, the applicant will be required to identify the anomaly and determine its historic or archeological significance. Should the investigation indicate that it is significant, certain prescribed procedures must be followed.
- Where contact with archeologically sensitive areas is almost certain to occur, the HCERS advised that they would request that gas drilling and all appurtenant activities be prohibited.

The cultural resources report to be reviewed by the SHPOs and U.S. Department of the Interior will suggest various procedures for locating sensitive areas, such as remote sensing techniques, and various procedures for mitigation. The actual consultation process, however, would be on an application-specific basis.

The types of procedures to be contained in the cultural resources report are basically the same as those already being used for Outer Continental Shelf exploration activities.

201-5

Copies of the DEIS were sent to the New York State Office of Parks and Recreation, to the Secretary of Pennsylvania Department of Environmental Resources, and the Director of Ohio Department of Natural Resources for review and comment. None of these agencies advised that their comprehensive plans for recreation would be adversely affected. The comments of these agencies relative to recreation are being addressed in this Final EIS. On an application-specific basis, the Buffalo District would coordinate with these agencies to ensure that specific proposals do not conflict with statewide comprehensive outdoor recreation plans. It is also assumed that the leasing programs of the three states would include consideration of these recreation plans.

201-4 blowouts on page C-3 and for capped jack-up rigs on page C-6 should be discussed. The document states that oil from blowouts and diesel fuel from capped rigs could be windblown to shore. If so, shoreline resources, including recreation, might be severely affected.

201-7 Under Accident Contingency Plans in Chapter 1, plans and agencies designated to deal with oil and hazardous substances spills are described. However, no information is provided regarding the technical capacity of these agencies to adequately deploy the necessary clean-up measures before contamination affects the shore. The environmental statement should discuss the emergency clean-up measures which would be used for each of the above-discussed worst cases. The likelihood of success of such measures under a variety of possible weather conditions and accident locations should then be discussed. The potential short-term and long-term effects of such spills on aquatic and coastal resources should be discussed in appropriate sections.

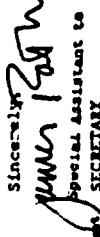
Wildlife Resources

201-8 More specific information regarding probable impacts on aquatic and terrestrial resources should be presented; this can be drawn from OCS oil and gas operations as well as past Canadian operations in Lake Erie. Since Canada has 15 years of experience in developing and producing Lake Erie natural gas, we suggest that the environmental statement contain more information regarding the environmental problems and successes they encountered. This information should include, but not be limited to, the following: aquatic impacts, impacts of associated onland facilities (pipelines, spoil disposal sites, injection wells, storage facilities, etc.), mitigation measures, accidental spills, and environmental monitoring studies or systems.

201-9 Operations described in the Onland Alternative Program may significantly impact aquatic populations in streams within the county study area. The environmental statement fails to properly consider the impacts of chronic and acute oil and salt water pollution that characterizes current oil and gas production operations in the Onland Alternative study area.

201-10 The environmental statement ignores the improvements in water quality that have occurred in Lake Erie in recent years. Many of the references utilized as data to analyze impacts were written before the efforts to restore water quality in Lake Erie began to show success.

We appreciate the opportunity to review and comment on this statement.

Sincerely,

 Special Assistant to
 the Secretary

Enclosures

201-6

Capsize of a drilling rig is considered to be an accident with low probability of occurrence, and the probability of an oil blowout is considered to be very small (see Table 1-35). Effects of such accidents have been adequately assessed at the programmatic level in Table 4-5 and the associated text. Site-specific information and impact assessments would be covered on a site-specific basis for natural gas development in Lake Erie.

201-7

Although the possibility of accidents involving the release of crude liquid hydrocarbons or diesel fuel is considered to be nearly zero, the potential environmental consequences of such accidents are examined in Tables 1-35 and 4-5 and in Appendix C. A major release of liquid hydrocarbons has not been recorded during the 68 years of natural gas development in Canadian waters.

It is beyond the scope of the programmatic DEIS to determine the state-of-the-art of cleanup technique or the technical capacity of legally designated agencies. We have assumed the capability of existing legislation to work. Agencies and procedures relating to spills are outlined in the section on Accident Contingency Plans (paragraphs 1.076-1.084).

Worst-case estimates of crude oil and/or diesel fuel releases are 300 bbl (Appendix C) and 16,000 gal (Appendices B and C), respectively. Therefore, the amount to be contained or cleaned up is at worst relatively small and in this context would not require complex containment and cleanup techniques. A spill prevention control and countermeasure plan (SPCC) must be developed by owner/operators, certified by a registered engineer, and approved by appropriate agencies. Both the New York leasing requirement (Table A.1, item 50) and state/federal regulations (paragraph 1.084) provide for procedures, methods, equipment, and other requirements to prevent the discharge of hazardous substances. See Topical Response Number 7 on Contingency Plans and Cleanups.

201-8

See Topical Response Number 1 on the Canadian Experience in Lake Erie and Topical Response Number 2 on the Impacts of Accidents. Consideration of Canadian Experience. More specific information regarding probable impacts on aquatic and terrestrial resources is beyond the scope of the programmatic DEIS. Site-specific information and impact assessments would be covered on a site-specific basis for natural gas development in Lake Erie.

201-9

The Onland Alternative Program is a hypothetical program developed for comparative purposes only. Impacts of the Onland Alternative Program are assessed in the DEIS. See Topical Response Number 11 on the Onland Alternative Program.

201-10

The USEPA (Herdendorf 1980) reported that although the effectiveness of nutrient controls in reversing eutrophication in Lake Erie cannot be demonstrated, the halting of further degradation is an important first step. Also, many of the new treatment facilities are just now being placed in operation. Modifications in agricultural practices will reduce the loading of nutrients to the tributaries, but these changes will not be reflected in water quality improvements for several years, due to slow migration of sediment to the lake. It is important that this start at improving the conditions of Lake Erie be continued and that new methods of lake restoration be explored.

SPECIFIC COMMENTS

- 001-11 Onland Alternative Program - page 2-10, paragraph 2.091. This paragraph states that site-specific environmental descriptions are not available for either program. We suggest using the Canadian offshore gas developments to estimate the probable environmental effects of U.S. offshore developments. The Onland Alternative Program is proposed for an area where oil and natural gas are currently being produced. There are significant environmental problems associated with some of this ongoing production that should be addressed. Chronic salt water and oil pollution results from both active and abandoned wells and pipelines. Acute oil spills can result from pipelines or storage tank ruptures. Impacts of and measures to control chronic and acute oil and salt water pollution should be addressed in the final environmental statement.
- 001-12 Onland Alternative Program - page 2-25, Table 2-4. Many sections of the Onland Alternative study area have large tracts of maturing forests. The environmental statement should discuss the advantages to wildlife of scattered 3-acre clearings such as are proposed for the Onland Program. Proper revegetation of these sites and the access roads can significantly benefit wildlife.
- 001-13 Endangered Species - page 2-25, Table 2-4. See comments, page 6-27, paragraph 3.090.
- 001-14 Water Quality - page 3-9, paragraph 3.028. The second paragraph of page 3-9 reports on Lake Erie's extreme eutrophication in the early 1970's, the water quality agreements between the U.S. and Canada signed in 1972 and 1978, and the initiation of massive remedial action. The report fails to take into consideration the fact that Lake Erie's water quality has improved greatly. Significant increases in sport fish populations have been noted in recent years.
- 001-15 Sport Fishery - page 3-15, paragraph 3.053. The dollar value of the sport fishery should be converted to current values rather than averaged back to 1965.
- 001-16 Sport Fishery - page 3-15, paragraph 3.054. This section should be revised to discuss the importance of walleye and coho and chinook salmon to the sport fishery. Recent State/Federal efforts to restore lake trout to Lake Erie should be presented.
- 001-17 Commercial Fishery, page 3-15, paragraph 3.055. This section should be revised to include bait fish. The 1973 reference will not reflect the vast improvement in water quality and resulting changes in species composition.
- 001-18 Commercial Fishery - page 3-16, paragraph 3.057. The statement "In Pennsylvania it is doubtful that commercial fishing still takes place" is in error. There are numerous commercial fishermen operating out of Erie, Pennsylvania.
- 001-11 See Topical Response Number 1 on the Canadian Experience and Topical Response Number 2 on the Impacts of Accidents: Consideration of Canadian Experience.
- 001-12 The Onland Alternative Program is developed for comparative purposes, and impacts of and measures to control chronic and acute oil and salt water pollution from the Onland Alternative Program are addressed in Chapters 2 and 4 of the programmatic DEIS. See Topical Response Number 11 on the Onland Alternative Program.
- 001-13 See Response 001-9.
- 001-14 See Response 001-10.
- 001-15 According to the U.S. Survey of Current Business, 1965 dollars may be converted to 1980 dollars by using a multiplication factor of 2.44. This produces a current value of approximately 50 million dollars. However, efforts to develop a salmonid fishery and to stimulate the walleye fishery in the Lake in combination with the general increase in fishing as a recreational pastime have probably increased the value of the sport fishery. The actual value may be calculated by a number of methods, depending on the specific information required. That the Lake supports a valuable resource is not in question.
- 001-16 See Response 001-15.
- 001-17 The staff acknowledges the error; however, the assessment is unchanged. The statement in paragraph 3.057--"In Pennsylvania, it is doubtful that commercial fishing still takes place"---should be deleted. Commercial fisheries are important economic institutions in all the states bordering the Lake. Fish are commercially sought not only for human consumption but also for resale to use as bait in sport fishery. As is evidenced by the comments, the commercial fishery is concerned about the proposed action and its effect on harvest and gear. The comments also indicate conflicting statements relative to the success of net deflectors on wellheads. The Reference Program has proposed net deflectors on wellheads as mitigation (paragraph 4.208). Impacts to the commercial fishery would be further evaluated on a site-specific basis.
- 001-18 See Response 001-17.

- 001-19 Wetlands - page 3-26, paragraph 3.079. The statement that "..... Pennsylvania has no overall wetland policy at present....." may not be totally accurate. Amendments to the Dam Safety and Inflowage Act (32 P.S. Sect. 693.1-693.2) and regulations implemented on September 27, 1980 (25 PA Code CH 105), now provide comprehensive protection to wetlands. The DEIS was essentially written prior to this date.
- 001-20 Information developed in Chapter Three on Environmental Setting should be used in Chapter Four on Consequences. Impacts to raptors would be minor and, therefore, are not included in Chapter Four. Documentation by recent information, therefore, is not needed for assessment purposes.
- 001-21 The statement as presented is incorrect. Delete the word "only" from the second sentence. Assessment statements in Chapter Four (Consequences) are not altered by this mistake.
- 001-22 Comment noted.
- 001-23 The treatment of endangered species is adequate at the programmatic DEIS level (paragraph 4.090). Impacts to endangered species would be highly site-specific and, therefore, treated on a site-specific basis for natural gas development.
- 001-19 Wetlands - page 3-26, paragraph 3.079. The statement that "..... Pennsylvania has no overall wetland policy at present....." may not be totally accurate. Amendments to the Dam Safety and Inflowage Act (32 P.S. Sect. 693.1-693.2) and regulations implemented on September 27, 1980 (25 PA Code CH 105), now provide comprehensive protection to wetlands.
- 001-20 Wetlands - page 3-25, paragraph 3.086. The statement "Raptors continue to decline because of reproductive failure due to pesticides should be documented by recent literature."
- 001-21 Wetlands - page 3-25, paragraph 3.086. The statement "Only the open water of Lake Erie and Erie Bay are used by waterfowl, both during and over winter" is erroneous. Two excellent wetlands, Conneaut Marsh and Pymatung Swamp (mentioned in paragraph 3.079), as well as numerous other wetlands and waterways in the Erie region, are heavily used by waterfowl.
- 001-22 The statement "valued streams support high populations of muskrat and beaver" is somewhat misleading. Although some streams in this area provide excellent muskrat habitat, the wetlands mentioned above are among the most productive muskrat habitat in Pennsylvania.
- 001-23 Endangered Species - page 4-32, paragraph 4.090. This paragraph needs clarification. The difference between significant adverse effects of both programs on species or populations of species that are endangered, rare or threatened and adverse direct impacts on an individual animal or plant should be explained.

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C.

IN REPLY, PLEASE REFER TO

January 8, 1981

Colonel George P. Johnson
District Engineer
U. S. Department of the Army
Corps of Engineers, Buffalo
District
Buffalo, New York 14207

Dear Colonel Johnson:

This letter and enclosure provide comments made by the Federal Energy Regulatory Commission staff on the "Draft Programmatic Environmental Impact Statement: U. S. Lake Erie Natural Gas Resource Department." While the DEIS is lengthy and detailed, it appears to be sufficiently definitive in describing impacts and offering solutions to the problems presented. We believe that certain portions of the DEIS could have been improved, however, by coordination with the FERC. Additionally, we would direct your attention to the fact that the Commission has placed considerable emphasis upon regulatory actions that would correct imbalances between natural gas supply and demand.

The enclosed comments are directed toward those aspects of the DEIS that relate to the natural gas responsibilities of the Commission.

We are appreciative of the opportunity to review and comment upon the DEIS.

Sincerely,

Jack M. Reissmann
Jack M. Reissmann
Advisor on Environmental Quality

Carl W. Shuster, Jr.
Carl W. Shuster, Jr. - Ph.D.
Coordinator, Coastal Zone Affairs

Enclosure

FERC-1

The technical team for this project was established in 1977. Our notice of intent to prepare the EIS was published in the Federal Register of July 30, 1979, as well as our public notices announcing public hearings. Part of the difficulty in early coordination efforts to establish the technical team stemmed from the reorganization of the federal energy agency structure during that period. Additionally, publication of the notice of intent to prepare the EIS failed to elicit any inquiries from federal agencies not already on the technical team. The following Federal Energy Regulatory Commission (FERC) offices were advised of pre-EIS public hearings: License Projects Division of FERC, Washington, DC; FERC regional office in New York, NY; and FERC regional office in Chicago, IL.

January 8, 1981

FEDERAL ENERGY REGULATORY COMMISSION

Staff Comments on the Programmatic Draft
Environmental Impact Statement (DEIS)
for U.S. Lake Erie Natural Gas Resource Development
Prepared by
U. S. Army Corps of Engineers and the U. S. Environmental
Protection Agency

Page 1-4. Natural Gas Supply and Demand

FERC-2
A FERC survey of the nation's major interstate natural gas pipeline companies and their customers indicates that curtailment of natural gas service is not expected to result in any significant industrial or commercial disruption or shutdown during the present winter heating season. The projection of an adequate gas supply for priority needs such as home heating, as well as for normal industrial and commercial operations, is contained in a recent FERC staff report, "Impact of 1980-81 Winter Gas Supply for 28 Pipeline Companies." (Copies of this report can be obtained through the FERC's Division of Public Information (telephone (202) 337-8015).) This detailed analysis by the Commission's Office of Pipeline and Producer Regulation reveals that, even if this winter is somewhat colder than normal, projected deliverability from all gas supply sources -- including storage withdrawal, emergency gas, and interstate pipeline companies -- will be adequate to meet demand. The 28 companies surveyed, representing 99 percent of the gas transported by interstate pipelines, projected available market supplies from November 1980 through March 1981 will total 6,384 billion cubic feet (Bcf), compared to 6,300 Bcf delivered last winter.

FERC-3
Numerous factors indicate that natural gas supplies will improve, at least for the short term. Reduced demand for natural gas resulting from conservation efforts, a slow-down of the national economy, and price competition from alternative energy fuels such as oil and coal are cited as the reasons for the slight decrease of anticipated deliveries for this winter. However, the long-term outlook for natural gas supplies is less clear. No realistic forecast of natural gas availability can be projected beyond the next few years until the effect of the Natural Gas Policy Act of 1978 (NGPA) on production can be better evaluated.

FERC-2
The short-term supply outlook as determined by FERC's Office of Pipeline and Producer Regulation is noted. This outlook is supportive of the discussion given in paragraph 4.104 of the DEIS, which advised that no shortages are predicted at this time. See also Topical Response Number 12 on the Need for Natural Gas.

FERC-3
The reasons provided in this comment for improved short-term supply outlook are consistent with those given in paragraph 4.104 of the DEIS which included conservation, fuel switching, increased prices, and state incentives for increased local production. Economic slow-down and competition from alternative fuels are acknowledged as important factors additional to those in the DEIS. We concur with the statement that until the effect on production of the Natural Gas Policy Act of 1978 (NGPA) can be better evaluated, the long-term outlook is currently uncertain and that no realistic forecast of natural gas availability can be projected beyond the next few years. See also Topical Response Number 12 on the Need for Natural Gas.

Page 2-1. Natural Gas Policy Act

FERC-4

The DEIS discusses the NGPA in several sections, but it does not clearly delineate the FERC's role in administering the NGPA or its responsibility in interstate natural gas regulation. The final statement should include the following information:

The FERC is primarily responsible for administering and enforcing compliance with the NGPA (92 Stat. 3150). The NGPA establishes a series of statutory maximum lawful prices for various categories of natural gas, including gas destined for both the interstate and intrastate markets. Under the NGPA, if the gas involved is located on lands subject to state jurisdiction, determinations of eligibility are made by the appropriate state agency regulating gas production; if the gas is located on lands under Federal domain, a Federal agency makes the determination. Determinations of NGPA eligibility are subject to FERC review. In addition, all interstate natural gas is subject to FERC jurisdiction. The Natural Gas Act and the National Environmental Policy Act grant authority or require that the FERC investigate the environmental effects of a proposed gas transportation project, as well as the potential gas reserves, the need for this gas, and the availability of capital to develop this resource.

Page 2-4. Alternative Supplies of Natural Gas

FERC-5

The discussion of alternatives to the proposed action should note that even if the most optimistic estimates of natural gas reserves proves correct, such supplies would do very little to offset any future imbalance between natural gas supply and demand. However, realizing that a solution to the energy problem will be achieved only if all practicable energy supply options are pursued, we suggest that the DEIS stress the national need for all forms of energy resource development.

FERC-4

Although the DEIS does indicate the role of FERC in paragraphs 1.014 and 2.007, we agree that a clearer delineation of the Commission's regulatory role in administering the NGPA and its responsibilities in interstate natural gas regulation would improve the overall report. We have adopted the wording suggested in the comment as new paragraph 1.015a to be inserted between paragraphs 1.012 and 1.016 of the DEIS. The new paragraph reads as follows:

The Federal Energy Regulatory Commission (FERC) is primarily responsible for administering and enforcing compliance with the Natural Gas Policy Act (NGPA) (92 Stat. 3150). The NGPA establishes a series of statutory maximum lawful prices for various categories of natural gas, including gas destined for both the interstate and intrastate markets. Under the NGPA, if the gas involved is located on lands subject to state jurisdiction, determinations of eligibility are made by the appropriate state agency regulating gas production; if the gas is located on lands under Federal domain, a Federal agency makes the determination. Determinations of NGPA eligibility are subject to FERC review. In addition, all interstate natural gas is subject to FERC jurisdiction. The Natural Gas Policy Act and the National Environmental Policy Act grant authority or require that FERC investigate the environmental effects of a proposed gas transportation project, as well as the potential gas reserves, the need for this gas, and the availability of capital to develop this resource.

FERC-5

The national need for all forms of energy resource development is beyond the scope and mandate of the DEIS. However, the need to develop all sources of potential natural gas supply is discussed (see pp. 2-5 to 2-16). See also Topical Response Number 12 on the Need for Natural Gas.



United States
Department of
Agriculture

Soil
Conservation
Service

U. S. Courthouse and Federal Building
100 South Clinton Street, Room 771
Syracuse, New York 13240

January 9, 1981

Colonel George P. Johnson
District Engineer
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Johnson:

The National Office of the Soil Conservation Service has forwarded the "Draft Programmatic Environmental Impact Statement for U. S. Lake Erie Natural Gas Resource Development" prepared by the U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency (transmittal dated November 10, 1980) to this office for review and comment.

We have reviewed this statement from the standpoint of SCS expertise, interest and responsibilities.

The statement does recognize, as best possible, the nonspecific related impacts of On-Land Alternative Programs as they relate to agriculture and prime farmlands. General mitigating measures such as salvage and reuse of topsoils and erosion control during drilling and pipeline installation activities are addressed.

SCSN-1 Comment noted.

We appreciate the opportunity to review and comment on this statement.

Sincerely,

Tom E. Schuchman, Jr.

Paul A. Dodd
State Conservationist

cc: Office of Federal Activities, EPA, New York, New York
Norman A. Berg, Chief, SCS, Washington, D.C.
Honorable B. Hilner, Director, NETSC, SCS, Broomall, Pa.



SCSN-1
10-10



UNITED STATES DEPARTMENT OF COMMERCE
The American System for Policy
Washington, D. C. 20540

JUN 13 1983

Colonel George P. Johnson
Director, National
Regulatory Policy, Office of Regulatory
Affairs, Department of the Army
1715 Wisconsin Ave., NW
Washington, DC 20315
Attention: Regulatory Planning Branch

Dear Colonel Johnson:

This is in reference to your draft programmatic environmental impact statement entitled, "21 Lake Erie National Use Reforms and Management". The statement is being reviewed by the National Regulatory Commission. The Commission's comments are forwarded for your consideration.

Please give me the opportunity to provide these comments, which we hope will be of assistance to you, by sending appropriate regulatory needs and copies of the final statement.

Sincerely,

P. V. Nash
P. V. Nash
Regulatory Policy Secretary for
Regulatory Policy Affairs
James J. Jones
Director, Research Laboratories
NSA



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Environmental Research Laboratory
Great Lakes Environmental Research Laboratory
2100 Waterman Avenue
Ann Arbor, MI 48104

December 31, 1980

TO:

Joyce Ward 1980

FROM:

Raymond J. Ward 1980/12/31

SUBJECT:

DEIS 8011.08 - D. S. Lake Erie Natural Gas
Resource Development in Offshore Waters of
New York, Pennsylvania and Ohio

The referenced draft environmental impact statement (DEIS) has been reviewed and comments are submitted for your consideration. The subject matter, because of its sensitivity, warrants a comprehensive analysis and this was accomplished in a broad spectrum of natural, cultural and socio-economic impacts.

DOC-1

Chapter one is an extremely detailed description of a scenario for developing gas reserves in portions of Lake Erie. It develops gas reserve estimates and locations, detailed engineering applications and an economic analysis of the projected period of gas production. This discussion is interesting and observational but one wonders if the conduct of such a study should be in the private sector.

DOC-2

The chapter consistently ignores the presence of gas development with a 30-year history from the same reservoirs in the same lake. The tabulations of potential hazards are extremely thorough as are the reviews of institutional controls and gaps. However, these could all have been listed from existing information without the gas development scenario.

DOC-3

Chapter 2 discusses alternatives to development of gas reserves in Lake Erie. The discussion centers on economic viability of the various alternatives including Alaskan and foreign gas as compared to the scenario developed in Chapter 1. This again is an interesting analysis of the potential for natural gas development in Lake Erie but its relation to the environmental impact of developing reserves under the lake is remote. As pointed out in the introduction, economics and political implications are outside the scope of this DEIS.

DOC-4

Chapter 3, Environmental Setting, describes the natural, cultural and socio-economic characteristics of the shoreline counties in detail. Most



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A young agency with a history
Tradition of service to the Nation

DOC-1

Since gas development in Lake Erie will require federal permits for various activities and structures, it is the responsibility of the federal agencies to determine the consequences of permit issuance. The analysis of environmental impacts requires that a program of some type be reviewed in terms of potential benefits and detriments to the human environment. Since the DEIS was prepared without benefit of a specific proposal, it was necessary to develop the Reference Program. Information on the engineering design of the program, economics, and gas reserve estimates had to be developed to determine if there were adequate technologies to limit the release of materials to the lake to an acceptable degree and to determine if the program that results in the smallest releases to the environment would be economically feasible. The DEIS was prepared in anticipation of future interest by operators in U.S. Lake Erie gas development. Should development be found acceptable in principle and should operators show an interest in developing the reserves, then at that point in time, the private sector and the states would look closely at the potential reserves and economic aspects. They would also propose the specific engineering design that they intended to utilize. See Topical Response Number 10 on the Reference Program Concept.

DOC-2

Refer to Topical Response Number 1 on the Canadian Experience and Topical Response Number 2 on Impacts of Accidents: Consideration of Canadian Experience.

DOC-3

Chapter Two of the DEIS presents information on those alternatives to Lake Erie gas development that are reasonable and viable alternatives to the proposed action. The chapter presents information indicating that the most viable alternatives are those which utilize existing technology on proven reserves, have sufficient infrastructure for increased development, and are or will be tied into the Lake Erie region markets (see paragraph 2.044). Discussion of reasonable alternatives to a proposed action is necessary to make a reasoned decision on the action and is mandated by the regulations promulgated under the National Environmental Policy Act of 1969 (NEPA). Economic viability of alternatives is a factor used in determining if an alternative is reasonable. The chapter also advises of the environmental effects of gas to be imported to the contiguous United States from development in Alaska and the Gulf of Mexico.

DOC-4

Chapter Three of the DEIS focuses on those environmental setting factors that will either affect (e.g., geology, air quality) or be affected by any development in Lake Erie. Energy use is part of the existing and projected setting of the region and is a factor to be affected by any development. The environmental setting appropriately includes socioeconomic factors. The existing setting is contained in Environmental Impact Statements as mandated by regulations promulgated under NEPA. It is necessary to determine ambient conditions of the human environment to determine how they will affect or be affected by a proposed action. Development of the gas reserves by the Corps or USEPA is not being considered. However, the three states have expressed an interest in leasing the underwater land to operators. We are viewing the development from our regulatory standpoint in the event that, after analyzing their respective needs, the states and potential operators determine to proceed with proposals to develop.

- XXC-4 { of this material is irrelevant to development of the DEIS. For example, the projected demand for natural gas relates to the need for development of this resource. The document repeatedly states that development of gas is not being considered in the study but then expends considerable effort in assessing the need for development.
- XXC-5 { The rationale for development of an on-land alternative program is not serious. Natural gas has been historically produced in the region. If reserves are available and a demand exists, these reserves will be exploited and the potential for and cost of development will be less than that in Lake Erie.
- XXC-6 { Chapter 4 is the focus of the DEIS in that the range of environmental impacts is addressed. As in other sections of the document, the summary of environmental impacts at the end of the chapter deals more with mitigation than with impacts even to the point of prescribing how the drilling platforms should be painted. Appendix B describes vessel and rig characteristics. The impression imparted is that this is a plan for development rather than an environmental impact assessment.
- XXC-7 { Although disclaimers are common, the document appears to be a plan (Reference Plan) for development of gas reserves underlying Lake Erie; further, the presumption is made that the entire lake area will be developed in one comprehensive program. In reality the development, if it is ever permitted, would probably be in stages or within a sequence of geographic areas depending on local demands and would be undertaken by various independent interests.
- XXC-8 { The report is extremely thorough in that all conceivable environmental impacts are addressed including natural, cultural, social, and economic aspects. If the background and impacts on these aspects were extracted they would constitute an environmental impact statement. All of the excellent background material and scenarios for developing the natural gas resource then could be included in a report on the feasibility of developing the natural gas resource in Lake Erie.
- XXC-9 { This DEIS should be especially good because the years of drilling and production experience in the northern part of the same lake can provide a wealth of data on every natural aspect. For some reason the report ignores the Canadian experience. Is their information proprietary? The excellent Canadian reports pertinent to other facets of the document have been referenced extensively. This experience can be readily quantified and combined with the impact assessment in Chapter 4, would be preferable to the portulations incorporated in the Reference Program. The DEIS should not present a plan for development of a resource but rather should assess the environmental consequences of such development.
- XXC-10 { A few specific comments are included below for your further consideration.
 1. S.018 No evidence that hydrocarbon releases are small and localized.

DOC-5

Refer to Topical Response Number 11 on the Onland Alternative Program. We did advise in paragraph 2.063 that it appears reasonable to assume that reserves of natural gas on land will continue to be developed and that if accelerated exploration and development were to occur upland, partial compensation for the absence of lake drilling might be achieved under a scenario of severe gas curtailments.

DOC-6

There is no summary at the end of Chapter Four. The section cited in this comment is entitled "Mitigation of Reference Program Consequences." The suggestions made concerning the coloration and design of drilling rigs were to mitigate the esthetic impact of the program. Information in Appendix B was used to determine whether or not a program as conservative as the Reference Program would be economically viable. The Appendix also conveys information on the type of technology that would result in the smallest release to the environment of materials used and residuals generated. The purpose of the DEIS is not developmental but rather environmental and regulatory in nature.

DOC-7

As indicated above, the study is not developmental. The Reference Program is being used to assess potential environmental impacts of gas development. If the Reference Program is ultimately determined to be environmentally acceptable, it would be used as a point of reference or guideline of acceptability for review of future specific proposals. The specific proposals by operators (i.e., developmental plans) would be analyzed to determine their impact on the environment. The Reference Program provides valuable information and guidelines for the review of specific proposals and points out areas where more detailed study is needed at the time of permit application reviews. See Topical Response Number 10 on the Reference Program Concept.

The DEIS essentially presents the worst-case type of analysis. Total development is assumed for several reasons. First, the total development assumption provides worst-case environmental impacts and gives an indication of the possible cumulative effects on a worst-case basis. The other reason for assuming accelerated development was for the purpose of economic feasibility analysis. The economic evaluation attempted to simulate development over a period of years, with the productive life of individual wells being 15 to 20 years. The program was initiated in 1980 and accelerated to maximize the use of cost data based on known trends (see paragraph 1.152). The DEIS modeling cannot predict the degree of interest that operators may show, the competitive aspects of development, or future reactions and schemes for development by operators and states.

DOC-8

The DEIS advises of the necessity for the Reference Program at this point in time in paragraphs 1.005, 1.006, 1.007, 1.020, and 1.021. If the Reference Program were deleted from the report, there would not be any proposal to analyze since no proposals have been submitted by operators. The Reference Program is the crux of the impact analyses, the protective technologies and methodologies, and the guidelines of Appendix D. See Topical Response Number 10 on the Reference Program Concept.

DOC-9

Refer to Topical Response Number 1 on the Canadian Experience and Topical Response Number 2 on Impacts of Accidents: Consideration of Canadian Experience.

DOC-10

Paragraph S.018 is a summary of the more detailed information in the text. The analysis itself is contained in Chapter One (section on hazards and accidents), Chapter Four (sections on water quality, water supply, and aquatic ecology impacts), and in Appendix C (worst-case accidents).

DOC-11	1. s. 020	Statistical background for such occurrences must be readily available. Quantify here rather than postulate.	DOC-11	See Response DOC-10.
DOC-12	11. s. 023	History on Canadian side of Lake can be used here rather than guesses.	DOC-12	Refer to Topical Response Number 1 on the Canadian Experience and Topical Response Number 2 on the Impacts of Accidents: Consideration of Canadian Experience.
DOC-13	11. s. 026	If toxic elements are exposed and transported, the effect will not be temporary if they can then enter the food chain.	DOC-13	Paragraph 5.026 is a summary of the more detailed information in the text. The analysis is contained in Chapter Four (sections on water quality, water supply, and aquatic ecology impacts). Bioaccumulation was discussed in the DEIS as a potential impact (paragraph 4.046).
DOC-14a	4. s. 1.024	Onland program rationale is incongruous. Exploration and production obviously is cheaper and potentially less harmful to the environment. If a demand exists then on-land development should take place. Your deduction says there is no demand for production anywhere in the region at this time.	DOC-14a	Refer to Topical Response Number 11 on the Onland Alternative Program. Also, the results of our comparative analysis of offshore vs. onland impacts as contained in Chapters Two and Four of the DEIS do not support the conclusion in this comment that onland development is potentially less harmful to the environment. The DEIS did not make any statement that onland development in the region does not exist. The ongoing operation is described in paragraphs 2.014 to 2.016.
DOC-14b		Why do all projections stop at the waters edge in figures?	DOC-14b	We are unable to provide a response to the question about ending projections at the waters edge since we cannot determine which figures are being questioned or whether they are numerical figures or graphic figures, and we have no indication of which projections are being questioned. However, most of the information in Chapter One is applicable to the Reference Program which is an offshore program, and the offshore area ends at the waters edge.
DOC-15	1.23, 1.043	Why make educated guesses when producing fields are directly adjacent? Not clear why the Canadian experience is not used. It is not available?	DOC-15	Refer to Topical Response Number 1 on the Canadian Experience.
DOC-16	1.53, 1.090	No demand is presumed here. Do you presume maximum development rate? Political-social factors must be considered in such populations.	DOC-16	See Response DOC-7 concerning the reason for assuming accelerated development. Also, economic and environmental impact modeling cannot predict future political and social factors that may affect energy demand.
DOC-17	1.103, 1.142	Reason for no empirical data is not clear. An identical program has been underway in the north portion of the same lake for 30 years. Why can you not extract from the Canadian experiences?	DOC-17	Refer to Topical Response Number 1 on the Canadian Experience and Topical Response Number 2 on Impacts of Accidents: Consideration of Canadian Experience.
DOC-18	3.11, 3.041	No hypollimnion or anoxic zone in western basin.	DOC-18	The western basin is outside of the area of the proposed action; however for additional information on anoxic bottom waters see Britt (1955), Britt et al. (1968), and Zapotosky and Herdendorf (1980).
DOC-19	4.1, 4.001	Rationale for discussing alternatives to development of reserves in Lake Erie is not clear. The judgment is being made as to the relative significance which relates to need. Again, the document is supposedly addressing the potential environmental impact of gas production but digresses into an evaluation of the net benefits of gas production.	DOC-19	See Response DOC-3.
DOC-20	4.1, 4.002	Question about the possibility of a need for engineering information when filling for a permit is not clear. The law presently requires this information. Would conceptual approval of a plan eliminate the requirement?	DOC-20	The phrase used in paragraph 4.002 concerning the fact that the Corps and USEPA may require certain information was intended to convey two concepts. First, the phrase means that the agencies have the authority to require specific information on a proposal. Secondly, the word "may" was used because of the generic nature of the DEIS and to express the fact that data needs will vary from proposal to proposal and from site to site. Conceptual design does not negate future data needs.
DOC-21	4.1, 4.002	Disposal of cuttings from on-land program is not addressed. Table 4-2 Problems associated with disposal should not be different from Lake or land if both are being disposed of on land.	DOC-21	Under certain circumstances during the drilling of the primary surface hole with a drillship, the cuttings are not collected for onshore disposal; therefore, there will be a greater impact from onland disposal in the Onland Alternative Program.
DOC-22	4.13, 4.021, 4.20, 4.047, 4.467, 4.197	Another impact of resuspension is to make contained compounds available to the biota near and at the interface and reintroduce them into the food chain. This could be a potentially serious problem.	DOC-22	See Topical Response Number 6 on Sediment Resuspension and paragraph 4.046 where potential for bioaccumulation is discussed.

- DOC-23 { 4-13,
4-23 } See Response HHS-3.
- DOC-24 { 4-17,
4-034 } Although the benthic community may not be in intimate contact with the entire substrate profile that could be disturbed, the community is in contact with upper layers of the profile which tend to have the higher heavy metal concentrations (see Table E.6). The impact assessment for paragraph 4.034, therefore, remains unchanged.
- DOC-25 { 4-23,
4-039 } The cited paragraph (4.059) on recreation advises of water quality impacts. The statement refers to the temporary impacts on water quality during nearshore construction (pipeline burial, landfill work) and not the drilling activities which are located outside the one-mile buffer zone. In Table 4-3, it is indicated that pipeline laying and burial will have a minor impact on water quality.

"Localized Areas" is something of a misnomer. Hydrocarbons floating on the surface could reach a shore. The localized area then would be a reach that would be significant to riparian interests. Impact of oil is not addressed in Table 4-5.

Last sentence is not accurate. The benthic community is in contact with sediments to a minimal depth that is less than the potentially disturbed depth.

Water quality at beaches could be affected. Earlier conclusions in Water Quality Section were that restrictions on drilling locations are such that inshore zones would be unaffected. Conclusions should be consistent.



Department of Energy
Washington, D.C. 20585

Mr. : 77

Colonel George P. Johnson, C.E.
Chief, Environmental Engineering
Buffalo District, Corps of Engineers
1774 Siega Street
Buffalo, New York 14207

Dear Colonel Johnson:

Your letter of November 3, 1960, which forwarded a copy of
E-15, "An Environmental Assessment: Impact Statement,"
concerning the proposed construction of a new
"aged" The Department of Energy's "Technical Team" repre-
sented by Mr. J. H. Johnson and Mr. R. L. who are assigned to
our Office of Oil and Natural Gas, and the attached
committee for your study group's consideration.

It should be noted that we greatly appreciate your continued
commitment and leadership in this project. The draft E-15
document is a valuable contribution to the overall understanding
of a wide range of vital interest and support for oil and
the Department. The Technical Team members will continue
to be available for consultation and assistance.

Sincerely,

W. J. Hall
W. J. Hall
Chief, Office of Oil and Natural Gas
Office of Oil and Natural
Resource Applications
Enclosure

Comments of Department of Energy Technical Team Representatives,
U.S. Lake Erie Natural Gas Resource Development.

General Comment

This "Draft Programmatic Environmental Impact Statement" write-up is extremely well written, thoroughly researched and professionally presented. The Environmental Protection Agency, the Buffalo District Corps of Engineers and the Argonne Laboratories personnel involved, merit special and individual "credits" for a tough job, well done.

As a point of departure for later site-specific EIS considerations and requested permitting, this document should prove to be a useful, responsive and time-saving tool.

Specific Comments

Region V (Chicago) Representative

"Looks like a good job; I can't find much wrong with it."

"This meets all of the requirements of the clean air act and the water pollution act."

"Argonne Laboratories is proud of this job and are glad they did it."

"Ohio's State Energy Office now has a prepared list of recommended drilling sites - they are more willing than ever to make a start."

Chicago Operations Office, DOE

"We now have and foresee no objections to proposed (exploratory drilling) actions in Lake Erie. We will have to wait for a site specific permit request for further data. We can't find fault with this (Draft EIS) effort."

Office of Oil and Natural Gas, Resource Applications, DOE

DOE-1 { 5.004

"National needs for increased natural gas production in Northeast Quadrant can be amplified/updated."

DOE-2 {

- Priority national goal to reduce 1980's 75 million dollar imports of foreign oil and resulting adverse USA balance of payments should be featured."

DOE-1

The need for natural gas in the Lake Erie region was discussed in several sections of the DEIS (see paragraphs 1.009, 1.018, 3.130-3.136, and 4.180-4.187). See also Topical Response Number 12 on the Need for Natural Gas.

DOE-2

See Topical Response Number 12 on the Need for Natural Gas.

DOE-3	5.005	"Lake Erie and northeast industrial area needs for dependable, affordable supply of clean burning fossil fuels can be quantified and shown to be vital for arresting decline trend in industrial outputs."	DOE-3	The importance of natural gas to the regional economy and to industry in the Lake Erie region is discussed in several sections of the DEIS (paragraphs 1.009, 1.017, 1.018, 3.125-1.137, 4.185, and 4.201).
DOE-4		"South shore of Lake Erie is within 100 miles of a major interstate pipeline which serves New York State and New England markets. This can/will be used to market gas production in excess of local industrial, commercial and residential demand(s)."	DOE-4	The south shore of Lake Erie is well served with a number of natural gas pipeline lines. For example, in New York paralleling the Lake (onshore---several) miles from the Lake), the Tennessee Gas Pipeline Company owns a 26-inch pipeline; in Pennsylvania, several lines owned by the Pennsylvania Gas Company (10- and 12-inch) are close to the shoreline; and in Ohio, a number of pipelines (a 20-inch line, and numerous smaller pipelines) owned by The East Ohio Gas Company and Columbia Gas of Ohio, Inc., serve the nearshore area. Apparently, any excess natural gas supply could be moved through the existing pipeline network to service the New England market.
DOE-5	5.011	"The creation of one office (per state) to manage program is strongly supported. Efforts to implement a "one-stop" management are appropriate."	DOE-5	Comment noted.
DOE-6	1.015	"Post NGPA of 1978 and expected (decontrolled) increased gas prices are not predicted to alter or reduce incentives for Lake Erie gas development. In fact, producers of "local" gas will have more incentives and advantages than ever - higher market prices and the reduced/alienated gas transmission/transportation costs."	DOE-6	Comment noted.
DOE-7	2.016	See notation from 1.015	DOE-7	Comment noted.
DOE-8	2.044 2.045 2.046 2.056 2.061 2.063 2.099, Table 2-7	Summaries - DOE strongly supports these conclusions in 2.044, 2.045, 2.046, 2.056, 2.061, 2.063, Table 2-7.	DOE-8	Comment noted.

State of EIS Environmental Impact Statement
Chapter 11. Lake Erie Wetland and Riparian Wetland

11-1

A very thorough and comprehensive report regarding an exploratory and development program involved in the production of offshore Lake Erie Natural Gas.

Project Description

Anticipating that future development, deep land lease to explore the three areas involved and appropriate regulatory requirements will be required to complete necessary activities.

Anticipating this specific Environmental Impact Statement.

I would assume in technology impacts report of development to also look at the document. This is a good document in terms of treatment of many applications.

This programmatic EIS does not submit the drilling of EIS and that the same actions will require specific EIS and both EIS and Corps permit.

Conservation and Environment would like to monitor.



DEPARTMENT OF STATE
Washington, D.C. 20520

BUREAU OF OCEANS AND INTERNATIONAL
ENVIRONMENTAL AND SCIENTIFIC AFFAIRS

January 29, 1981

District Engineer
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207
Attention: Regulatory Functions Branch
Dear Sir/Madam:

The Department of State has reviewed the Corps of Engineers' and the Environmental Protection Agency's "Draft Programmatic Environmental Impact Statement: U.S. Lake Erie Natural Gas Resource Development" and would like to offer the following comments.

005-1 Page 21, 3.030: The discussion should be strengthened relative to the 0.5 mile limitation regarding the proximity of drilling operations and underwater gas and glycol pipelines to potable water intake. This would include discussion of the effects of water current patterns in relation to accidental release of contaminants, routine discharges and pipeline breaks; and a statement regarding the degree of certainty to which the assurance can be given that nothing will happen to potable water supplies.

005-2 Page 1-45, 1.120: Regarding the discharge and disposal of hazardous wastes, we would inquire as to whether the waste management strategy mentioned here must conform to that of the Great Lakes Water Quality Agreement. If so, it should be discussed fully.

005-3 Page 1-99, Table 1-35: Do the disposal plans for CaCl₂ and polybrine fluids mentioned in this section refer to onshore disposal solely in the U.S.? Similarly, will accidental releases of small amounts of materials in Lake Erie affect solely the waters of the U.S.?

005-4 If there is reason to believe that Canada may, in some way, be impacted by these impacts should be addressed in an environmental review document in accordance with Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions."

005-5 Page 4-15, 4.029 discusses potential impacts on inshore spawning grounds. Is there a possibility that accidental releases of material to the Lake may affect these areas in Canada or the U.S.?

005-6 Page 4-16, 4.032: The local impact on phytoplankton and zooplankton from resuspended sediment from pipeline construction activities should be clarified.

005-1

In the Reference Program, it was assumed that no drilling would take place within 0.5 mile of a potable water intake.

Detailed analysis of the vulnerability of specific water intakes to adverse impacts as a result of drilling activities must await site-specific assessments. The conservative assessment contained in the Programmatic DEIS indicates little cause for concern over impact to potable water supplies with a 0.5-mile buffer zone.

Most gas reservoirs encountered in Lake Erie are expected to produce dry gas, i.e., gas with very little associated condensate. Although any liquid hydrocarbons encountered would probably not flow to the surface without pumping because of the low pressures found in the target formations, the Reference Program assumes that, during the initial formation test, a well found capable of significant production of natural gas liquids (5 gallons per day is the assumed cutoff level) would be plugged and abandoned (paragraphs 1.030-1.033).

See Topical Response Number 8 on Glycol Chlorination and Topical Response Number 9 on Water Supplies and Treatment Costs.

Refer to Topical Response Number 5 on the Great Lakes Water Quality Agreement of 1978; the 1909 Boundary Waters Treaty between the U.S. and Canada; and the International Joint Commission.

The Reference Program is designed to conform with U.S. standards, rules, and regulations and occurs wholly within U.S. waters. Thus, calcium chloride and polybrine, when used for operations in U.S. waters, shall not be discharged into U.S. waters under the Reference Program. Likewise, the disposal of the material in the United States must conform to waste management strategy.

In the Reference Program, drilling is assumed to occur no closer than 3.5 mile to the U.S.-Canada boundary. A modeling analysis of water quality effects of routine and accidental discharges from well sites has shown that for conditions prevailing in Lake Erie, a small release of material 0.5 mile from the international boundary could result in a small elevation in the concentration of the spilled material at the boundary. Such effects would be localized, temporary, and small in magnitude. Concentrations are expected to meet U.S. drinking water standards and water quality criteria for freshwater aquatic life. No detectable effects are expected near the Canadian shoreline.

In the event of a loss of well control or a gas pipeline break, the concentration of hydrogen sulfide close to the source may be high and could, under unfavorable conditions, exceed water quality criteria for freshwater aquatic life (Table 4-5). Such occurrences would be infrequent, localized, and temporary, and are expected to have no significant effect on populations of biota in U.S. or Canadian waters. No effects are expected near the Canadian shoreline.

DO-1: Page 4-17, 4.037: To better understand the possible impacts on plankton organisms from the release of BCL, it would be helpful to clarify the expected composition of BCL and the frequency of release.

DO-2: Page 4-17, 4.037: It would be helpful to clarify this section by providing a list of various chemical releases and the subsequent probable impacts on plankton organisms.

In general, the Department found the DEIS to well done. We appreciate the opportunity to review the draft and look forward to receiving copies of the final EIS.

Sincerely,

Donald R. King
Donald R. King
Director, Office of
Environment and Health

DO-4

Executive Order 12114 requires that all Federal agencies, encompassed by and not excluded from the order, taking major Federal actions outside the United States must have in effect procedures for identifying and assessing potential impacts of those actions on the environment. The order also requires that the agencies must have in effect procedures for implementing the National Environmental Policy Act and general policy guidance for all Department of Defense components is contained in 32 CFR part 197. In consideration of these requirements, the Department of Defense has resulted in the development of a policy guidance document. This document has led to the conclusion that an environmental review document in accordance with E.O. 12114 is not required. First, the Reference Program constitutes an activity that takes place wholly within the United States. Including a 0.5 mile buffer zone around the international boundary, the Reference Program is not expected to do significant harm to the environment of places outside the United States. Second, the Reference Program is not expected to do significant harm to the environment of places outside the United States nor will it provide to another nation a product or involve a physical project which produces a principal product, emission, or effluent that is directly or indirectly strictly regulated by Federal law. Third, the Reference Program is not expected to create a serious public health risk.

DO-5

The Reference Program has established a one-mile buffer zone to reduce the potential for any releases from the Reference Program. Dispersion modeling studies have shown that concentrations of accidental releases would be extremely low (see Appendix C and Table 4-5) and that impacts would be minimal. See Response DO-3-1.

DO-6-4

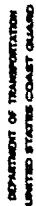
Refer to Topical Response Number 6 on Sediment Resuspension. Impacts to water quality are presented in Tables 4-3 to 4-5 and associated text.

DO-7

The composition of completion fluids is described in paragraph 1.107 and in Table 1-33. These fluids would not contain hydrochloric acid. The frequency of release will vary by geographical area and in time, and may be estimated in Table 2.1. Any resuspension of completion fluids would be extremely low (see Table 4-3 and associated text). In Table 4-3, the impacts to water quality are presented in Tables 4-3 to 4-5 and associated text.

DO-8

Representative components of completion fluid are identified in Table 1-30. Representative components of completion fluid are identified in Table 1-30. Plankton organisms are not expected to be present in relatively low concentrations, especially after minimal dispersion in Lake Erie. Impacts to plankton populations would be temporary and local. Impacts to water quality are presented in Tables 4-3 to 4-5 and associated text.



Group Address: C-10-1
 U.S. Coast Guard
 Washington, D.C. 20540
 Date: 2/26/80

11-11-11

Mr. ARTHUR RABIN
Department of Army
Buffalo District
Camp of Engineers
Buffalo New York 14203

Mr. Sanders:

10. We appreciate the opportunity to review the draft programmatic environmental statement. U.S. Lake Erie Regional Cap Management Development, and offer no comment at this present time.

55

No response required.

William M. Cozmon
William M. Cozmon
Chief, Environmental Science Branch

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA RIVER COMMISSION

Department of Public
Safety
Harrisburg, Pa.
17103

1-05-61

Mr. Arthur Marks
Department Of Army
Buffalo District
Corps of Engineers
Buffalo, New York 14207

Dear Mr. Marks:

Attached is my commentary upon review of the C.O.E.'s
Draft E.I.S. of Lake Erie offshore gas resource
development.

Sincerely,

Roger A. Kenyon
Lake Erie Research Unit

cc: Mr. S. Hood
Mr. V. Hudrak
Mr. D. Graff
Mr. J. Miller

Commentary on Draft Programmatic E.I.S. - offshore gas
resource development, Lake Erie.

Reference to:

PFC-1	3-12, 3.053	An atlas specifically delineating spawning and nursery will be available shortly from Great Lakes Fishery Laboratory, USFWS, Ann Arbor; contact person: Ms. Carol Goodyear.	PFC-1	Comment noted.
PFC-2	3-15, 3.056	Walleye are caught at a rate greater than described, certainly more than "occasionally".	PFC-2	See Response DOI-15.
PFC-3	3.055	Bait fishery, that is the harvest of bait fishes for immediate resale, is a large component of the commercial fishery not mentioned.	PFC-3	See Response DOI-17.
PFC-4	3.056	We are aware of continued conflicts in the area of net entanglement on well heads. It is our information that most well heads remain unprotected and that gas development are not placing deflectors on any of the wells.	PFC-4	This refers to the Canadian program (not the program assumptions in the DEIC), which specifies that the wellheads will either be placed in caissons or have deflectors over the top of them if they rise above the lakebed. See also Response DOI-17.
PFC-5	3-15, 3.057	The statement, "In Pennsylvania, it is doubtful that Commercial fishing still takes place", is a major error. Over 376 thousand pounds of fish were landed in 1978 by Pennsylvania fishermen. The value of this catch was 246,339 dollars. It is apparent that no further contact was made with any other agencies other than Ontario and Ohio. The lack of detailed inquiry in this area of the E.I.S. is disturbing since the welfare of fishing and fish stocks in Lake Erie is of major concern in any environmental impact situation.	PFC-5	See Response DOI-17.
PFC-6	3-13, 3.031	Resuspension of sediments becomes more than a minor problem, in terms of nutrients, heavy metals and all residual chlorinated hydrocarbons, when it occurs in a chemically reducing environment; in summer hypolimnion of central Lake Erie. To expect resorption of these items to modify resuspension effects at these times, especially if the source is continuous during all the phases of Reference Program, is somewhat naive. Under anoxic conditions (less than 0.6 mg O ₂ /l) the internal loading of phosphorus above is equal to 11% of the external loading of this element. In other words, it appears this document fails to recognize the importance of even "minor" disturbance of bottom sediments during any potential anoxic event in Lake Erie.	PFC-6	See Topical Response Number 6 on Sediment Resuspension.
	3.032 3.033	Same comment above applies here also, especially to central Lake Erie.		



STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE AND MARKETS
ROGER BARTLE COMMISSIONER
ALBANY NEW YORK 12242

January 12, 1981

Col. George P. Johnson
District Engineer
Regulatory Functions Branch
Dept. of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207

RE: Draft Programmatic
Environmental Impact
Statement - U.S. Lake
Erie Natural Gas Resource
Development

Dear Col. Johnson:

The above DEIS has been reviewed on behalf of the NYS Department of Agriculture and Markets. The following comments are forwarded to further your understanding of our agricultural concerns.

It is our belief that this DEIS does not recognize prime and unique agricultural lands - which comprise a limited and valuable natural resource - as environmentally sensitive areas. It is in the interest and spirit of both NEPA and the federal policies reflected below that this fact be incorporated adequately in the FEIS.

The most recent federal policy statement was issued by the Council on Environmental Quality (CEQ) in an 8/11/80 memorandum to heads of (federal) agencies on the "Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the NEPA". This memorandum which updated and now supersedes their 8/30/76 memo stated:

Determining the effects of a proposed federal agency action on prime or unique agricultural lands must be an integral part of the environmental assessment process, and must be a factor in deciding whether or not to prepare an environmental impact statement.

In addition, EPA's Administrator Douglas Costle issued a 9/8/78 policy statement which states:

NYAM-1

Paragraphs 3.093, 3.094, 4.092, 4.093, and 4.105 indicate the importance of prime and unique farmlands and the impacts on prime and unique farmlands. The impact analysis, however, is constrained because location of various onland activities is unknown. Proposal-specific information would be needed to determine if gas processing and compressor station atmospheric emissions would have any effect on prime and unique farmlands. However, prevention of significant air quality deterioration permit requirements would include consideration of the impacts on vegetation and soils. A specific site is also needed to determine if these facilities and associated pipelines would be located on land classified as prime or unique. Both the Corps and the USEPA are cognizant of the Council on Environmental Quality (CEQ) memoranda and CEQ regulations for preparation of EIS's in regard to prime and unique farmland impact analyses and have followed required procedures. Specific agency policies for implementation of the prime and unique farmland analyses were also utilized in preparation of this EIS. In this regard, the U.S. Soil Conservation Service is the federal agency responsible for classification and inventories of prime and unique farmlands. Prior to writing the DEIS, the Corps contacted all of the soil conservation offices with responsibilities in the Reference Program area. We attempted to obtain county-wide acreages of prime and unique farmlands and countywide maps showing the location of these farmlands. The following were contacted: State Conservationist's Office, New York State (Syracuse, NY), Soil Conservation Offices in Erie and Chautauque Co., NY; State Conservationists' Office, State of Ohio

2.

It is EPA's policy to protect, through the administration and implementation of its programs and regulations, the nation's environmentally significant agricultural land from irreversible conversion to uses which result in loss of an environmental or essential food producing resource.

1. Policy. TWA Secretary's Memorandum No. 1877 "Statement of Land Use Policy" (revised), 10/10/78, reaffirms Federal policy to "advocate the retention of important farm lands... wherever proposed conversions

1. caused or encouraged by actions or programs of a Federal agency;
2. licensed by or require approval of a Federal agency; or
3. inconsistent with local or state government plans...
ensure that such lands are not irreversibly damaged

Therefore, please note that not only LA it "race policy to preserve...
...and racial identity among the masses" (LITB # 094, p. 1-10),
...importantly, it is federal policy. Furthermore, it is
...to include actual racialists in table 1-7, "Summary of
...the Reinsurance Program," under the heading of
...Areas (pp. 1-10). We expect this location would also
...be maintained as described in Section C.002 of Chapter 4:
...THE PROSPECTIVE ACTION AND ALTERNATIVES" (pp. 4-11).

It is obvious that we are concerned with maintaining 50% as natural resource base. Northeast agriculture has increasingly been subject to non-agricultural development from a broad spectrum of uses. The major threat to the natural resource base is the loss of cropland, which currently stands at about 5 million acres in agricultural production, out of a total of 30.6 million acres. Less than 100,000 acres are being added annually, and the loss of cropland in production, current carry trends have to be corrected, a more competitive and profitable agricultural sector must be developed. The loss of cropland has potential: northeast agricultural self-sufficiency. This report has been prepared for the use of maintenance of the land resource base.

As you are aware, our agricultural lands along the shores of Lake Erie have been severely degraded and are being converted to other uses. The loss of the open space and agricultural lands is viewed as a serious problem. The loss of the open space and agricultural lands is viewed as a serious problem. The loss of the open space and agricultural lands is viewed as a serious problem.

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The comment concerning state policy to preserve prime and unique farmlands and the statement made in the BEIS report that Pennsylvania was "not exempted from the BEIS loss of prime farmland as a result of federal declassification" were given as an example in that Pennsylvania has recognized the importance of the loss and the need for a policy on farmland. The importance of the loss should not be interpreted to mean that other states have not recognized the importance of prime and unique farmlands or that there is no federal policy.

 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039

What is the answer?

[illegible]

1997/1998

[illegible]

"To encourage the maintenance of viable farming in rural areas, districts and their administrative authorities shall be modified to this end, and insofar as necessary, the procedures shall be modified to the promotion of public health and safety and with the promotion of the economic development of the population of any federal state, standards, criteria, provisions, or policies, and any other requirements of federal agencies, including provisions applicable only to obtaining federal grants, loans, or other funding,"

ART. 125. MINISTRIES AND BUREAUS, Article 125A, Section

We appreciate this opportunity to comment. If we can be of any further assistance, please do not hesitate to contact us at (518) 557-3711.

Secretly,

Figure 6

Rural Development Specialist -
Environmental Resource Management

202/202/202

at: Grocery I. form

EX-100-2 Comment noted. See Response WYAM-1.

3-68



STATE OF NEW YORK
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233

OFFICE OF PUBLIC AFFAIRS

January 12, 1981

Dear Sir:

Enclosed herewith are the official New York State comments on the draft programmatic environmental impact statement: U.S. Lake Erie Natural Gas Resource Development.

As the natural resource development agency in New York State and the lead agency for the potential development of natural gas from Lake Erie, the Department of Environmental Conservation has reviewed in detail the content and recommendations of the draft environmental statement. In that regard, my staff sent letters to seventeen state agencies and some seventy interested parties soliciting both general and detailed comments. This submittal includes comments from a number of both state and local agencies, as well as public groups likely to be affected or having an interest in Lake Erie development.

We believe that the draft statement represents a sincere effort to encompass the many varied concerns with development of the Lake, and responsible staff should be congratulated for the overall quality of the document. In addition, we believe that the document is comprehensive in scope and, in general, reflects a technical understanding of the proposed actions and their alternatives, a sensitivity for controversial issues, and an appreciation of the collective need to protect a very fragile environment while developing a critical natural resource.

We have several imperative concerns, however, that we believe must be more fully addressed in the final environmental impact statement:

1. Waste Discharges and Disposal

Our greatest concern for adverse environmental impacts from this program center on the issue of waste discharges and disposal of residuals. At the same time, the ambiguous classification of all drilling and formation fluids as either "hazardous" or "special" imposes an overwhelming constraint on the environmentally safe development of the Lake's natural gas resource. We note that under the Resource Recovery and Conservation Act, the term "special" wastes has now been eliminated with respect to oil and gas drilling wastes. Therefore, we recommend that you reevaluate and update the draft environmental impact statement using the Canadian experience as a model to more definitely discuss both discharges and disposal of natural gas development-related wastes.

DEC-1

See Topical Response Number 1 on the Canadian Experience and Topical Response Number 13 on Waste Disposal. Additionally, see Response DEC-15.

DEC-1

2. Water Supply

As Commissioner of the Department of Environmental Conservation, my first concern must be the protection of the lake as a source of potable water. Many communities in Erie and Chautauque Counties rely on Lake Erie for their water supply. These communities have pointed out that even minimal disturbance at their water intakes could cause serious disruption to their treatment facilities. We have assured these communities that the Department of Environmental Conservation will not undertake or support any program of development in Lake Erie that does not provide for the adequate protection of the water resource. Therefore, we request that the water supply aspects of the document be expanded to include a discussion of the Canadian experience with any water supply problems and, if any, how these problems were resolved.

3. Canadian Experience

In general, we believe that more effort should be directed toward the experiences of the Canadian government. With some 1300 wells actually drilled and in production, the Canadian experience represents a "full-scale, real-life working model" for study. The history of Canadian development and its successes, accidents and problems should provide actual measurements and observations of environmental impacts that can only be hypothesized for the Reference Program.

4. Reference Program

In general, we believe that the Reference Program is compatible with our present concept of prudent development of this resource. However, it should be understood that the Reference Program is comprised of a set of operational assumptions that have been hypothesized to enable meaningful extrapolation of impacts and a realistic analysis of results. Under no circumstances should the Reference Program be perceived as a firm plan that will in any way restrict the prerogatives of state governments that have from the noted Program. It is the state governments that have the overall authority and responsibility of implementation of a natural gas development program.

5. Interagency Task Force

While we fully agree with the objectives in recommending an Interagency Task Force to develop uniformity of administrative procedures and "one-stop" state entities to coordinate permit functions, we believe that these objectives cannot realistically be achieved. State regulatory responsibilities and business procedures vary from state to state. Such an organization will only add to the federal-state bureaucracy. New York State's

DEC-2

Because of differences between the Canadian and U.S. regulatory frameworks and differences between the Reference Program and the Canadian drilling program, a detailed description in the DEIS of the Canadian experience with drilling for natural gas in Lake Erie is considered inappropriate. The authors of the DEIS familiarized themselves with the Canadian program and, in order to fill data needs, conducted a field study in the vicinity of an operating drilling rig and a reconnaissance survey of hydrocarbons in Lake Erie that included areas in which gas resources are being developed. Results of these studies may be found in the following reports, which are available from the National Technical Information Service or from the authors: Ferwante et al. (1980) and Zapotosky and White (1980).

Additionally, see Topical Response Number 1 on the Canadian Experience, Topical Response Number 2 on Impacts of Accidents: Consideration of Canadian Experience, Topical Response Number 8 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs.

DEC-3

Refer to Topical Response Number 1 on the Canadian Experience and Topical Response Number 2 on Impacts of Accidents: Consideration of the Canadian Experience.

DEC-4

Although the operational procedures in the Reference Program are assumed (see Topical Response Number 10 on the Reference Program Concept), they nevertheless are very realistic, feasible, and protective technologies currently in worldwide use. The restrictions and guidelines of the program are similarly realistic, feasible, and protective and are based on the results of the impact analyses in the Draft EIS. Recommendations by the International Joint Commission, and various existing regulations such as those pursuant to the Clean Water Act, Resource Conservation and Recovery Act (RCRA), etc. If the Reference Program is ultimately judged to be environmentally acceptable in principle, it would be used as a guideline or reference point whereby future specific programs proposed by operators could be weighed and balanced against it. As indicated in the footnote at the bottom of page 1-7 (DEIS), future program proposals that vary significantly from the Reference Program and constitute relaxed technological performance standards could be evaluated on a case-by-case basis to determine the consequence of allowing increasing amounts of materials to be released to the environment. Undoubtedly, refinement and evolution of the protective guidelines and technologies will occur as new information is generated during proposal- and site-specific analyses and as studies are performed relative to various acts and regulations--such as RCRA, the Safe Drinking Water Act, Clean Water Act, and others. Although it is the states that have authority over development and leasing of underwater lands in Lake Erie, the federal government also has its responsibilities for activities related to gas development (see Topical Response Number 3 on the Task Force and Federal Regulatory Authority).

DEC-5

Refer to Topical Response Number 3 on the Task Force and Federal Regulatory Authority and Topical Response Number 4 on the Offshore Program Office. Also, procedures for federal leasing and development of Outer Continental Shelf (OCS) lands constitute a situation entirely different from the U.S. Lake Erie program from both an administrative and regulatory standpoint. In the OCS, the U.S. Department of the Interior, Bureau of Land Management (BLM), is the lead federal agency with authority to lease lands. In regard to OCS development, where islands or structures are to be constructed on lands that are under mineral lease from BLM, that agency, in cooperation with other agencies, fully evaluates the potential effects of leasing on the total environment. In these cases, the Department of the Army permit review and decision is limited to the evaluation of impacts of the proposed work on navigation and national security [33 CFR 322.5(f)]. In the case of Lake Erie, the land is owned by the states and BLM is not responsible for leasing. In this situation, on the federal level, the Corps is the lead federal agency, with USEPA acting as a cooperating agency in the evaluation of impacts of development on the total environment. The suggestions made in the DEIS concerning program administration are those that we believe will shorten the time period for permit and lease evaluations and reviews.

District Engineer

3.

DEC-5

Uniform Procedures Act - already in place - accomplishes much of what we believe can be expected of a "one-stop" concept. Again, the responsibilities of leasing and development in the State rest with state government. If coordination among states is necessary and desirable, then the state agencies should work together to resolve any outstanding conflicts. Our experiences with the federal leasing and development of the Outer Continental Shelf have indicated that the federal permit agencies, such as the Environmental Protection Agency and the Corps of Engineers, should evaluate their own permit procedures to shorten the time periods for review and approval of applications.

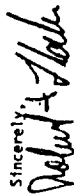
DEC-6

We recognize that a great deal of work must be accomplished by the State of New York before leasing and development of the Lake could take place. Rules and regulations must be drafted, leases and leasing systems must be developed, public hearings must be held, and new staff must be hired and trained to oversee the environmentally safe development of Lake Erie. I can assure you that this State will not move forward until we have resolved our outstanding concerns.

We believe, however, that the Canadian experience has generally demonstrated that natural gas development in the Lake can be accomplished in an environmentally sound manner.

Enclosed are both general and detailed comments and questions for your consideration.

We look forward to the continued cooperation of your agencies in this most important effort to help New York expand its production of indigenous energy supplies.

Sincerely,

Robert F. Flacke

Enclosure

District Engineer
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Attention: Regulatory Functions Branch

DEC-6 Comment noted.

New York State Department of Environmental Conservation
Division of Lands and Forests
Bureau of Wildlife Service

Technical Questions and Comments on the
Wildlife Management, Insect Management,
and Game Laws, and Game Management Regulations

January 15, 1961

General Comments on the Reference Program

DEC-7

As in any program based on a hypothetical set of assumptions, the Reference Program progresses in a manner more orderly than can be expected. While many of the basic assumptions are purposefully conservative, their synthesis has led some exceptionally optimistic results. For instance, the program describes timely leasing of all available acreage by a very few exceedingly fortunate companies who experience no competitive interference and who immediately proceed to drill every tract with predictable success. Their development programs appear to be undisturbed by other factors such as competitor pressure, availability of capital, and alternative investment opportunities. Additionally, the development programs appear to be immune from such accidents as a gamblers' run of dry holes or economic recession.

It would be more realistic to expect slow and selective leasing, cautious drilling, delays for program evaluation, delayed construction of pipelines and gas treatment facilities until sufficient reserves are proved, and overall incomplete development.

Since all such delays will reduce net present value, rate of investment return and revenues accrued to the States, we recommend that you include in both "Summary" and "Introduction to the Reference Program Concept" sections of the final statement, a statement strongly emphasizing that the Reference Program represents only one of many scenarios for profitable, environmentally safe exploitation of Lake Erie's natural gas resources. Likewise, it should be stressed that the profits, revenues and impacts expected from the Reference Program are only rough estimates.

There are other areas in which the Reference Program may be overly rigid: designation of restricted areas, leasing procedures and well spacing. Among the restricted areas that should be reconsidered are the shoreline buffer zone,

DEC-7

The rationale for selecting few operators is presented in the DEIS (paragraph 1.088). It is assumed that strict operational rules and regulations imposed by the States (summarized in Appendix D) and relatively large capital requirements compared to onshore development of similar gas resources would limit the number of potential operators willing to mobilize risk capital in the study region.

Competition among operators is noted in paragraph 1.087, but prediction of competitive aspects is beyond the scope of this analysis.

Dry holes are assumed in the Reference Program (paragraph 1.090).

Profits and revenues presented in the DEIS are estimates based on the Reference Program.

Refer to paragraph 1.036 of the DEIS. The economic evaluation is based on scenario assumptions well documented in the DEIS--regarding gas production, cost, price of natural gas, etc. Any change in these variables would change the economic result.

Additionally, see Response DEC-7.

the state boundary buffer zones and the potential sand and gravel areas.

Unnecessary loss of these areas would constitute waste.

DEC-9

We believe that a half-mile shoreline buffer zone will produce benefits nearly equal to those of a mile-wide zone, the exception being that drilling rigs will be more visible from the shore and more often encountered by recreational boaters. In view of the small number of rigs expected to be active on the lake, these small, possibly adverse, impacts do not warrant the loss of such a large potentially productive area.

DEC-9

Additionally, no compelling reason was offered for the exclusion of a one-mile wide band straddling interstate and international boundaries. Certainly the States can negotiate acceptable leasing and offsetting procedures along their common boundaries, and quite possibly, the State Department can do the same for the international boundary.

DEC-10

We see no obvious reason why potential sand and gravel development areas should be restricted, aside from an arbitrary preference for one resource over another. With proper control, both resources can be developed with little mutual interference.

DEC-11

While it is true that 640-acre spacing appears to generate the greatest profit and the least adverse impacts, we would like the Final EIS to consider development on 160-acre spacing. In view of the "minor", "localized" and "temporary" impacts predicted for most routine activities, it seems likely that closer spacing will not significantly increase the burden on the environment. Also, individual operators may find the closer spacing, and the compacted pay-out interval, more advantageous.

DEC-12

Of the leasing procedures recommended, we do not fully understand the concept or purpose of the "Lease Areas," but oppose delineation of large areas

DEC-9

The staff believes that, during Reference Program activities, the shoreline buffer zone offers more protection to the valuable resources of Lake Erie within the 30-foot contour. Most of the recent studies in Lake Erie concerning the effects of intake and discharge structures on adult and young fish and benthic plankton have led to the general consensus that the protection of fisheries is best achieved if depths on the order of 25 to 30 feet or greater are utilized. The 0.5-mile buffer zone would allow Reference Program activities in less than 20 feet of water. Additionally, the one-mile buffer results in less esthetic impact and less interference with recreational activities.

DEC-9

A 0.5-mile buffer exists only on the U.S. side of the international border with Canada. The buffer-zone concept was developed to provide state and international buffer zones so that drilling activities in one state or nation would not interfere with natural gas reservoirs in close proximity across state or national boundaries. The size of the buffer zone is based on the concept of one well per 640 acres.

DEC-10

The choice of resource use is a state decision. Should the states determine that gas development is a higher priority than sand and gravel areas they have a right to deny state authorization for commercial extraction of sand and gravel. In that event, Corps permits would not be issued where the state has denied its permits. However, based on our analysis, we do not believe that concurrent development of both resources in the same area is safe. The types of equipment used in dredging operations could damage wellheads and pipelines.

DEC-11

The 640-acre well spacing was developed for Reference Program activities. See Topical Response Number 10 on the Reference Program Concept. Changes in well spacing from those of the Reference Program would be addressed on a site-specific basis.

DEC-12

See Topical Response Number 10 on the Reference Program Concept and Response DEC-7.

XC-12 For the purpose of restricting bid proposals or the use of certain types of equipment. Tracts should be offered for leasing as they are dominated by potential bidders, awarded to highest bidder by tract; the type of equipment used to develop each tract should be determined by the physical characteristics of each tract, on a case-by-case basis.

General Comments on Waste Discharges and Disposal

XC-13 The question of waste discharge and disposal must be resolved by the respective federal and state agencies before leasing of the lake can proceed. In particular, the classification of these wastes must be discussed in more detail. In the Niagara Frontier, landfill sites for the disposal of hazardous wastes are at a premium and establishing new sites is difficult. We believe that these landfills should be observed for truly hazardous wastes. To our knowledge, there is no substantiation of the implication that drilling wastes are, in fact, hazardous.

XC-14 Within the document, there also appears to be some discrepancy involved with the methods prescribed for the disposal of drill cuttings. Under certain circumstances, the reference program permits their discharge directly to the lake floor, while under other circumstances, the reference program specifies removal to shore disposal facilities. It appears from the document that the factor governing the disposal is the type of drilling rig being utilized, i.e., floating or jack-up. Certainly, there must be some explanation as to why the mode of drilling should dictate the disposal method.

DEC-15 The discharge and disposal of wastes on the Canadian side must be explained in more detail. What are their methods and are they acceptable to the federal and state agencies here? More information is definitely needed.

DEC-13 See Response CSS-9.

DEC-14 As noted in Table 1-25, the cuttings are not contained and are released to the lake water during drilling of the (primary) surface hole by a floating rig because of the lack of "leverage" during this phase of drilling. Note that from the start of the drilling, a jack-up rig is anchored to the lake bottom by its supporting legs. The drilling of the secondary surface hole is the earliest phase of drilling that can be done closed-cycle by a floating rig.

The rationale for the procedures in the Reference Program is given in paragraphs 1.020 and 1.021.

DEC-15 Refer to Topical Response Number 1 on the Canadian Experience. The examination of issues report (McGregor et al, 1978) explained the Canadian program. The DEIS advised of certain Canadian strategies in the waste management section of Chapter One.

DEC-16

Shore the Federal Outer Continental Shelf Leasing program, ensure as Georgia has been leased with temporary drilling to shore drilling. One of the continuing concerns in that area is the discharge of drill cuttings and muds. As a result of this concern, the Federal agencies have undertaken studies to evaluate any associated impacts. We refer you to those studies in the hope that the claimed issues may be resolved.

DEC-17

Finally, the dumping of waste (drill cuttings, fluids, and muds) and other proposed method of disposal appears untenable. If there is a need to dispose of a hazardous discharge, then that discharge should be rendered to a secure hazardous waste disposal facility. However, the disposal of non-hazardous drill cuttings may be more effectively accomplished by discharge to the bottom of the lake. If that method is not acceptable, the alternative means of disposal we had could be developed. With the hazardous waste decision, for example, these wastes could be disposed in any permitted landfill or even used as incineration material for hazardous waste incineration.

DEC-16

Comment noted. The Outer Continental Shelf study is probably being performed on muds used in the marine program, not necessarily the type that would be used in lake Erie, and potable water supplies is not a concern in these marine environment studies.

DEC-17

Refer to Response CDS-8 regarding waste classification. Be advised of the difference between RCRA determinations of hazardous vs. the discharge of hazardous to waters. The Clean Water Act, not RCRA, applies to these discharges. Additionally, see Federal Response Number 10 on waste disposal.

Page 215, Paragraph 5.002

DEC-18 The lockport reefs are stratigraphic, not structural traps.

Page 215, Paragraph 5.009

DEC-19 The reference to creation of a new force to develop construction and operation permit forms remains quiet now as to the activities to be regulated. In the context of water quality, it may also relate to a State Pollutant Discharge Elimination System permit, or the National Approval. One permit form and procedures are already developed and in place. The model already required but containing a /judicial provisions that would be merely confirming and recognition on additional purposes. Continuing in the same paragraph, there is reference to the regulation of activities, a list of which could be characterized as activities personnel. This raises the subject of a spill prevention, containment, and control plan with all of its attendant features as would be required by EPCRA and the T.S. Other forms with review and input from the States.

Page 16, Paragraphs 5.016 and 5.017

DEC-20 Construction should be placed on construction methodology developments may use as the transportation and redistribution of sediments and forces to hold it in place.

Page 5, Paragraph 5.021

DEC-21 In western New York, the solution will mirror industry which uses well drilling and fracturing techniques to stimulate flow from well fields, enhanced considerable more water / activity (which could be characterized as the stimulation of water volume output) during drilling and fracturing

The commenter is correct. The lockport reefs were misidentified as structural traps. The correct term is stratigraphic traps. The word "stratigraphic" will be replaced by the word "structural" in the last sentence of paragraph 5.009 and 5.046. The word "stratigraphic" will be replaced by the word "structural" in Table 1-2. The second entry "structural trap" with the entry "stratigraphic trap".

Refer to Toxicological Response Number 3 on the Task Force and Federal Regulatory Authority and Toxicological Response Number 4 on the Offshore Program Office. Some of the information needed for a State Pollutant Discharge Elimination System permit application forms and there is inherent duplication in existing procedures.

Such constraints already exist (e.g., see paragraph 5.002) in the form of the information needed for a State Pollutant Discharge Elimination System permit application forms and there is inherent duplication in existing procedures. It is concluded that even with construction redistributing toxic sediments, impacts will be localized and temporary. Also, on a site-specific basis, testing of sediment could be required to determine toxic content and availability to organisms. This would be a site-specific basis. After laboratory testing, bioassays, and practical steps to minimize impacts during permit review, the Corps can condition permits for proper construction methodology. Also, see paragraph 4.031 of the DEIS concerning kill screens.

The stimulation techniques and volumes of additives have been well-established and documented as to their success in the Canadian drilling program, and similar techniques have been used at gas fields throughout the United States and the world. The well stimulation techniques required for the stimulation process, the equipment, and is employed over a shorter time period. The stimulation process, equipment, and materials requirements are discussed and listed in paragraphs 1.097 and 1.098 and in table 8.4 of the DEIS.

DEC-21 In one instance, a pipeline still moving company was initially shut down and subsequently put under control as to maximum pressure which could be maintained through the Conduits to prevent the building of excessive stress and the possible rearing of a major incident. These prohibitions should be applied in considering operating and development activities for the construction and stimulation of a gas flow from targeted wells.

Page 1-19, Table 1-2

DEC-22 Permeability for methane reservoirs is low high, water saturation low low.

Page 1-19, Table 1-2

DEC-23 This section indicates that all pipelines within the 30-foot depth control well be buried five to ten feet below the lake bottom. We suggest that the reference to depth of burial be deleted so it serves no informational purpose and will be interpreted as a construction basis. Further, this section indicates that beyond a 30-foot depth control, the pipeline will be secured in the lake bottom by other means. We suggest that reference to a specific technology be deleted and replaced by a statement indicating that where necessary, pipelines will be secured in the bottom.

Page 1-19, Paragraph 1.127

DEC-24 ...Reservoirs beneath the Canadian offshore gas fields are presently being held in liquid pending decisions on final disposal. May? that are the conventional value control?

This may indeed be true. However, the values and ranges indicated were derived from review of numerous data in these parameters and form the basis for the design of the pipeline. The values indicated are not intended to be exact, but are only meant or seen to be approximations that are assumed in order to support programmatic effects of a potential development program as hypothesized. It should be noted that the values questioned include composites from both the Medina and Clinton, not only from the Medina.

The figures that are suggested for burial of pipelines serve as reasonable guidelines and are based on past permit application for various types of pipelines. The figures are based on the design of the pipeline and the design of industrial facilities. The site-specific studies (Engineering) have generally shown that 5 to 10 feet of burial out to the 30-foot contour provides protection from ice. This will not always be the case and must be refined based on site-specific considerations and information on the structural aspects of the pipeline materials.

The anchoring stipulation was developed for Reference Program activities. See the Reference Program activities. The anchoring stipulation was developed for Reference Program activities. See the Reference Program activities. The anchoring stipulation was developed for Reference Program activities. See the Reference Program activities.

The statement in paragraph 1.127 of the DEIS concerning the Canadian brine reports indicated that the objective of the Reference Program is to treat the material for removal of solids, oil, and gas (paragraph 1.128). Paragraphs 1.110 and 1.115 provide information on the potential makeup of formation waters and reasons why discharge to waterways is not being considered.

Page 1-15, Paragraph 1.151

DEC-25 { Increase of using information and water supply limits for jack-up rigs, on
which the water supply is not sufficient for the operation of the rig, should
prefer to handle it in a comprehensive basis with the operator being
required to prove that a jack-up rig is suitable for the work.

Page 1-15, Figure 1.13

DEC-26 { Figure 1-13 would be greatly improved by adding reference points such as
ports and municipalities.

Page 1-15, Paragraph

DEC-27 { The sentence should also include reference to Article VII of the New York
State Public Service Law.

Page 1-15, Table 1-15

DEC-28 { The specific regulatory authorities for the miscellaneous requirements
category in Table 15 should be listed in the same detail as for other sections
of the table. A requirement for separate construction for withstood damage from
ice would be included.

Page 1-15, Paragraph 1.152

DEC-29 { Lockport reefs (see Figure 1-15 page 1-15). Considering the proposed
drilling cost picture it is probable that only the Lockport reefs will be
exploited. Further and appropriate consideration should be applied to be taken
in the gas window from these reefs and the regulatory work on the side of
New York would be much higher and less predictable on a variety of reasons
basis. The possibility of Lockport reef (unit) drilling might easily
phenomena and New York interest in the Reference Project. This possibility
should be considered before approval of the project is granted.

The constraints are based on current engineering design and Canadian experience
in the use of jack-up rigs. The design of the rig is based on the assumption
that the rig will be used in protection of water quality. It is not possible to
categorize and protection of owners and the general public from accidents. On a
case-by-case basis, proposals would be compared to guidelines, and operators
would be required to demonstrate that their rig is safe for the area (see
paragraph 1.152 of the DEIS).

Orientation of these general shoreline type areas in Figure 1-13 to various
points along the Lake Erie shoreline is indicated in Figure 1-13. The shoreline
is shown in the large folio map, Figure 1-1. The folio is of
larger scale and shows the locations of certain towns and cities more easily
than could be demonstrated in Figure 1-13.

Reference to Article VII is made in Table 1-10 and is implied in paragraph 1.073.
The discussion on page 1-37, as cited in the comment, is directed at subject
matter such as mineral rights, leasing, the task force, and the offshore office.
Article VII does not pertain to the subjects included on page 1-37.

All items in the miscellaneous category refer to footnote "c", which indicated
that no standard currently exists. The requirement that pipelines, landfills,
and other facilities be constructed to withstand the ice and wind damage from
the 200-year storm is listed in Table 1-10.

The production rate from a well from Lockport reef reservoirs and the cost
associated with the development are documented in the DEIS. In the programmatic
environment, the cost of development of the Lockport reef reservoirs is not
only in Ohio (Lease Areas XII and XIV). If Lockport reefs are encountered in
New York or Pennsylvania, the cost described for Lease Areas XIII and XIV can be
applied and benefits can be calculated.

Page 1-50, Paragraph 1.02
 DEC-30 { Prediction will not be completed in New York

Page 1-50, Table 1-22
 DEC-31 { It is indicated that experience will be gained when wells are abandoned.
 It is believed that experience will increase uncertainties. Impact and should not
 be considered except under extraordinary circumstances.
 The reference program indicated fluid release from the vertical alternative
 when the option is demonstrated. It is not current policy or practice to take
 up pipes, but to abandon them in place. Therefore, there is no need to indicate
 a possible source of impact from pipeline impact.

Page 1-50, Table 1-22, C.1.0
 DEC-32 { Eight and 1/8 inch casing should be set at least 50 feet below and
 100 feet from the well. If this casing is to serve as the outer casing, it
 contains a maximum of 1%.

Page 1-51, Table 1-22, B.1.2
 DEC-33 { Prediction will not be completed both in surface.

Page 1-52, Table 1-22, E
 DEC-34 { When plugging and abandoning wells, gas should be placed between all cement
 plugs.

Page 1-50, Paragraph 1.14
 DEC-35 { New York State's present procedure for measure dumping of chemical wastes
 requires that they be thoroughly identified prior to disposal.

DEC-30 Statement of position noted.
 DEC-31 The reasons for removal, environmental effects, and fluid releases are addressed
 in paragraphs 4.337-4.049. Comment on current policy for onland development is
 noted.
 DEC-32 The 5-foot number refers to the top of the casing, not the bottom. The wellhead
 will be protected by the casing when attached to the top of the surface casing
 and the casing will be protected by the surface casing when attached to the top of
 the wellhead. The casing will be protected by the surface casing when attached to
 Table 1-22 (C.1.1) for appropriate Reference Program description of surface hole
 drilling.
 DEC-33 All the Reference Program cement designs were calculated to cement all the
 casing strings back to the seabed.
 DEC-34 Statement of position noted. However, for the Reference Program, drilling mud
 will be used to fill the annulus between the casing and the wellhead. The mud
 between the balanced plugs. This mud in many cases will be gel-based.
 DEC-35 New York State's current procedure for waste identification is consistent with
 the Reference Program guideline (see paragraph 0.723).

Page 1-29, Paragraph 1.13

DEC-16 The program assumes production wells will be completed during the first year and underground pipelines and surface gas pipeline facilities will be constructed concurrently with the drilling. This paragraph further states that no more than 25 gas wells are permitted in an area, plans can be made for siting the treatment facilities and pipeline routing. These two concepts seem to be contradictory.

Page 1-30, Paragraph 1.37

DEC-37 These pages discuss locational constraints and location of environmental impact in different phases of development. We are concerned that these locational constraints will be interpreted as a prohibition against pipeline construction in any but the specified areas. We believe the table should indicate, possibly by footnote, that in some instances it will not be possible to avoid these areas and that remedial measures may have to be made. We believe that the table should indicate the mitigation measures that might be taken should it be necessary to construct in these sensitive locations.

Page 1-30, Paragraph 1.37a

DEC-38 The final environmental impact statement should include a system's map showing the probability, capacity, and duration of flow of gas pipelines of existing gas transmission and distribution systems.

Page 1-30, Paragraph 1.38 to 1.40a

DEC-39 An effective mitigation/avoidance plan or contingency plan is required for the various types of accidents listed.

DEC-16 The wells would be drilled throughout a lease area to determine reservoir size and conductivity. Treatment facility size. Treatment facility construction would take place concurrently with development drilling.

DEC-37 Comment acknowledged. Add superscript (b) to the Locational Constraints heading in Table 1-24. Add footnote, reading:

In some instances, it would not be possible to avoid all areas listed in the locational constraints table and, on the other hand, some areas may be avoided. The significance of the effect and to ensure that proper mitigation is implemented. The review would include the opportunity for public comment.

DEC-38 A summary map of the Reference Program was provided in the DEIS (Figure 1-1). A map of pipelines which serve the area has not been included. The Argonne staff has reviewed detailed pipeline maps of the Reference Program area. In general, the maps show a high density of pipelines in the central and eastern portions of the direction of natural gas flow is towards the east, northeast.

DEC-39 See Response D01-7 and Topical Response Number 7 on Contingency Plans and Cleanups.

Page 1-126, Table 134

DEC-40 Net present value of production is determined using a discount rate of ten percent. Fifteen percent is a more typical discount rate in current present value simulations.

Page 1-126, Figure 1-19

DEC-41 Because of the range of possible outcomes and the uncertainties inherent in production forecasting, use of single point estimates may be inadequate. At the least, the single point plotted should represent the mean of all possible outcomes evaluated for each case. A better procedure involves graphing the entire production possibilities/revenue distribution in relation to the probabilities associated with their occurrence. (ref. Alaska Department of Revenue, Petroleum Revenue Division, Petroleum Production Revenue Forecast Quarterly Report, (September 1979, pp. 23 and 24).

Page 1-131, 1-160

DEC-42 Model simulation run in the analysis indicates that return on investment ranges from 13 to 100 percent and 17 to 120 percent for the 288 and 365 day production years, respectively. Project analysis is before tax (ref. 1-158).

MDI indicated in this analysis may be at variance with recent industry and government evaluations of offshore rates of return. According to October, any single well elsewhere could generate more gas than their existing 60 Lake Erie wells, but that they produced a steady cash flow and 10 to 15 percent profit regularly, as long as costs are watched intensely.

In 1979, Jack C. Throat of Shell Oil Co. pointed out that the government was taking 70 percent of cumulative offshore revenues, while the industry's rate

Examining the industry practice for financial evaluation, it appears that a 10% discount rate was very commonly used. As a result, in the current study, a 10% rather than 15% discount rate was used. Discount rate reflects cost of capital (and risk of investment, etc.) and the expected rate of inflation. A higher expected inflation rate may necessitate use of a higher discount rate. But, this expectation would also require the use of a higher rate of cost and price escalation. Both sides of the equation (cost and benefit) will rise. As a consequence, one would not expect any substantial change in the results reported in the DEIS.

The staff agrees that this would have been a better approach for the analysis. But, due to a lack of reliable data on probability distribution of production, this approach was not followed. The staff did estimate the revenue and, hence, net present value (NPV) and return on investment (ROI) with respect to various gas production levels.

The economic results of the Reference Program represents one of many scenarios for profitable, environmentally safe exploitation of Lake Erie's national gas resources. It is based on specific drilling success ratios, rate of gas production, cost estimates, and gas price increases. If these assumptions are altered, the results would be different than those reported in DEIS. The rate of return on investment (ROI) as reported in different studies are not very different than those reported in the DEIS if the analyses were done on an after-tax basis. Only 20% of the lease areas have a ROI near the high end of the range (see Table 1-36).

DEC-42) of return on RGS income was only 0.3 percent annually (ref. Oil & Gas Journal, December 12, 1979, p. 287).

A white paper on bidding patterns, rates of return and ownership percentages in 1979 by E. Bismore House indicated that of all tracts bid with positive return rate, 27 percent had rates of return less than 10 percent, 40 percent had rates of return between 10 and 20 percent, 15 percent had rates of return exceeding 20 percent. Per firms making up the top 10 to attempt the highest estimated rate of return was 14 percent. (ref. E.S. Department of Industry, presentation to the OCS Advisory Board, 12/15/79)

Table 1-3, Table 1-1

DEC-43) Can be updated at least one year.

Table 1-1, Paragraph 1.04

DEC-44) The probability of meeting coal (anthracite/semisub bituminous) plants, and the probability of establishing the proven vertical return on, produce gas, and other gas technology should be addressed.

Table 1-13, Paragraph 1.04

DEC-45) The assumption that one main transmission line will not be necessary is unrealistic. Whether one transmission facilities are needed would require an analysis of the existing transmission system in the North American. The results of Columbia Gas' Case 20975 before the New York State Public Service Commission would indicate that the document's assumption is false.

DEC-43) The conclusions reached in the ZEIS comparison of onland and offshore impacts would not change as a result of the update.

DEC-44) The staff does not understand the comment. If this comment pertains to the use of CO₂ and geopressurized aquifers, then the aquifers have been addressed and the staff has used those results as those discussed for coal gasification.

DEC-45) Depending upon the location of significant natural gas production in the 23-county alternative study area, transmission pipelines may be necessary. However, according to EERC, and with reference to the pipeline maps, this region is well served with a dense network of gas transmission pipelines. Also, the construction of thousands of miles of gathering systems and trunk lines is assumed for the Onland Alternative Program (see paragraph 4.012).

While positive correlation will show the regulation covering some parts, there is no reason to assume significant and constant will remain. Measurements of the binding need not result in total greater. Binding alone regulation may require regulation. Further, if certain related proteins were found to be related, they would be related.

The statement that the magnitude and frequency of international impacts from the world's activities is in order of magnitude greater than the same falling on individuals, the comparison cannot be made in generalizations and is highly inappropriate. The world's program, for example, goes on credit for assisting individuals. Further, the immediate benefits that the world's program would bring are more rapid and deep than any other, even in fast health programs. They are driving into the same area that

There is insufficient information to advise the other two witnesses and no determination of how a situation more closely linked was produced.

DEC-29 This paragraph should reflect the proposed initial time commitment plan and the Basic Comprehensive Student Benefaction Plan stipend and the need for counter-balance contributions as later to be.

Impacts associated with pipeline construction, operation, maintenance, and decommissioning are discussed in Chapter Four; erosion control measures are considered, and pipeline removal is assumed for worst-case conditions.

Table 2-6 is presented for comparative purposes (Reference Program vs. Inland alternative program). The statement that magnitude and frequency of terrestrial impacts from the inland alternative is an order of magnitude greater than lake drilling is derived from Chapter Four assessments at the programmatic level. Background information for impacts to aquifers (Table 2-6) is presented in Chapter Four (groundwater hydrology, paragraphs 4.004-4.016).

Table 2-6 and paragraph 2.095 are presented for comparative purposes. Reference to the program vs. Onland Alternative Program). Appropriate detailed discussions are provided in Chapters Three and Four (paragraphs 3.090-3.097 and 4.091-4.108). See end of paragraph 3.052.

The continuation and improvement of recreational use of Lake Erie is stressed in proposed Coastal Zone Management (CZM) plans of New York, Pennsylvania, Ohio, and Michigan. The objectives of these CZM plans and the approved CZM plan of Pennsylvania are similar. These plans for recreational use can be generalized as follows: (1) increase and improve public access to the lake; (2) encourage recreation and sports participation; (3) improve public access to the lake for recreation, etc.; (4) to improve public access in urban areas; (5) to acquire and/or encourage purchase of land near the lake for recreational use; (6) to prevent or discourage incompatible development on lands near recreational areas; (7) to improve recreational opportunities by providing facilities such as parking lots, restrooms, observation towers, boat launch facilities, etc.; (8) to provide waterfront developments, multiple uses, and quality facilities.

Page 3-15, Paragraph 3.90

DEC-50 { more appropriate land use information for New York State is available in
regulations and are prepared by the Regional Technical Planning
Commission and the Southern Tier West Regional Planning Commission

Page 3-15, Table 3-9

DEC-51 { Table 3-9 should be corrected for consistency with the latest amendments to
the CFS 90

1. For the greater than 3 and 400 values should be given.

2. For TSP there is no secondary standard for the annual mean.

3. Photochemical standards should be changed to the same standard of

0.12 ppm.

This table states that the maximum standard is not to be exceeded more than
once per year; while Table 3-9 gives maximum concentration "allowed once
per year." Both tables should be made consistent with the federal ambient
standards.

Page 3-15, Table 3-15

DEC-52 { Corrections in draft population projections and associated reference program
input projections should be made so that any census estimates have not been fixed in
1981.

Page 3-15, Table 3-15, Page 3-16, Table 3-15, Page 3-16, Table 3-15

DEC-53 { These tables compare historical rather than projected industrial output
per unit of output. Therefore, titles should be changed accordingly.

Paragraph 3.90 is a generalized discussion of major land-use categories such as
farming, pasture, and urban. Although more recent information may exist, it
would not change the content of the paragraph since no new major land uses have
been added to the data. Some significant shifts in general distribution
have occurred, but the data are not presented in a way that would justify
changing the information in this paragraph. The DEIS and have not indicated that the
generalized information in this paragraph is incorrect.

DEC-54 { Applied Table 3-9 in the DEIS with new Table 3-9 as given in the Errata and
Appendix at the end of this section.

DEC-52 { A revision of population projections in the DEIS is not necessary because
reference program inputs would remain unchanged.

DEC-53 { The information in the tables were projections at the time they were made by
"Corrections" in 1978. They were not actual reported data (see footnote "a" to
Table 3-15).

2000-1-12, PARAGRAPH 3.12

SEC-14 The question whether a proposed farm right-of-way is necessary through residential areas.

2000-1-12, PARAGRAPH 3.13

SEC-14 The fact it is difficult to compare separate parcels with gas facilities with separate parcels with landfills.

The assumption of land use conflicts is spatial. Land use conflicts of gas use on both, through-outland and gas facilities, pipelines and gas wells are located in outland and outland. Existing means to the well and location of flow lines suggest the location of roads and roads.

2000-1-12, PARAGRAPH 3.14

SEC-14 To make more impacts are considered, some guidelines should be considered. The following table on the one-hour average sound level, 100 (1) are recommended to be applied at the nearest residence or other noise sensitive land use.

	Daytime	Nighttime	Evening
Residential Construction	65	55	75
Residential Production or			
Residential Construction	55	60	65
Residential Production or	65	55	75
Production Facilities should use portable noise level meters.			

Regarding pipeline and compressor spacing, spacing should be sufficient and limited to distance.

SEC-14

The joint pipeline right-of-way given in the DEIS was provided as worst-case. This was done to be consistent with the rest of the report which bases all analysis on the worst case.

SEC-14

The cited paragraph (4.03) pertains to production facilities. The area generally contains prime and unique farmlands. Grape growers could feel different about the proposed pipeline project rather than small wells or pipelines which could occur in the area.

SEC-14

Although we agree that there should be noise guidelines, neither the Corps nor the EPA could provide such guidelines. The EPA could provide such guidelines through its noise guidelines in either the state program or through local government ordinances. Paragraph 4.097 advises of these means to implement noise guidelines.

Page 4-36, Paragraph 4.101

DEC-57 The text has no discussion of how many facilities would be needed if applicants had to construct their own.

Page 4-51, Paragraph 4.145

DEC-58 We disagree that maintenance of a low-grass forb cover on the pipeline corridor will usually alter the aesthetic nature of the residential setting. The vegetation cover is normally an extension of a person's yard. Sometimes adjacent landowners maintain the pipeline right-of-way as an extension of their residential lawn. Also, we disagree that soil exposure offers a significant visual impact as this is a temporary condition mitigated by a vegetation restoration program.

Page 4-59, Table 4-21

DEC-59 "Induced" employment was estimated using a 2.0 multiplier. This indicates that the propensity to consume locally was 0.5. Has this been verified empirically or assumed from other study data? In the latter case, the source should be indicated.

Page 4-67, Paragraph 4.199

DEC-60 There is no proof that there would be an accelerated erosion rate modifying the bluff landforms. This paragraph still assumes that the pipelines will be removed. We have previously indicated that this is not likely to be the case.

Page 4-68, Paragraph 4.204

DEC-61 It may not be possible to accomplish construction during seasons of low lake level or low rainfall. It is more appropriate to identify mitigation

DEC-57

The volumes (in acre-feet) of wastes produced by the Reference Program are presented in Table 1-31. The number of waste disposal sites will be contingent upon the depth and area (i.e., the volume) of the average site (see also Topical Response Number 13 on Waste Disposal).

DEC-58

As mentioned in paragraph 4.145, the esthetic impact of soil exposure relates to the actual construction periods prior to proper revegetation. Soil exposure, no matter what the time limit of existence, results in a visual impact.

DEC-59

It was not assumed that the propensity to consume was 0.5. A multiplier of 2.0 for direct and indirect employment has not been verified (Table 4-21); it was assumed after examining multipliers in a number of counties. When one takes into account (1) wide variance in multipliers reported from different projects in different counties and industries, (2) the fact that the time frame is arbitrary for this DEIS action, (3) the unknown state of the national and local economy, etc., it seems reasonable to use one number as an approximation based on several such multipliers reported in a variety of studies. A multiplier of 2.0 was chosen in this way. Having indicated the source of the multiplier as poor, note that if either 1.0 or 3.0 had been used rather than 2.0, it would not affect the conclusion. Instead of 1842 induced employment in an area of about 4 million people (Table 3-10), we would have about 921 (if 1.0 were used) or 2763 (if 3.0 were used). Clearly, induced employment over a wide range of assumptions will not have a large impact in the area of consideration.

DEC-60

It is generally accepted that man-made disturbances of natural slopes promote localized increases in erosion rates. The Reference Program as defined (pages 1-7 through 1-113) includes the removal of pipelines as part of decommissioning. This is necessary in order to render the analyses of potential impacts representative of worst-case conditions that are anticipated to accompany gas development according to the Reference Program. It should be noted that the Reference Program, although intended to be realistic, is hypothetical. It is recognized that this development scenario may not be the case in actuality, but nonetheless must be considered in terms of identifying the range of impacts to be analyzed in order to fulfill the purpose of the programmatic DEIS. See Topical Response Number 10 on the Reference Program Concept.

DEC-61

We agree that it may not always be possible to construct during seasons of low lake level or low rainfall, but we would consider it as mitigation when possible. Construction methodologies to mitigate impacts are more easily determined on a site-specific basis. The Corps routinely conditions its permits for proper construction methods when such conditioning is necessary.

DEC-61 { measures and personnel available to implement these measures should they become necessary.

Page A-69, Paragraph A.207

DEC-62 { Lake trout and Slimy Sculpin (primary forage fish for Lake Trout) are not discussed in the DEIS. Since well sites will (or could) be located in deep water areas (primary habitat areas for these species) there are potential adverse impacts that could be expected.

Page A-70, Paragraph A.213

DEC-63 { Selective vegetation management techniques may or may not be consistent with the intent of maintaining vegetation that will turn brown and identify possible gas line leaks. The statement that maintenance costs will be lower and fewer herbicides will contaminate land and water needs some justification in the text.

Page A-22, Table A.1

DEC-64 { Item 50 on page A-22 indicates that contingency spill or accidental discharge plans are to be filed with the New York State Department of Environmental Conservation. This item should also indicate that such emergency plans are also required under Part 255 of the New York State Public Service Commission's Rules on Gas Safety.

Page D-5, D.011

DEC-65 { To the list of New York regulations should be added the water quality standards 6 NYCRR 700-704.

DEC-62

in actuality, the nearshore zone would be disturbed to a greater extent by pipeline burial than any offshore disturbance by rig jack-up pads. During primary surface hole drilling from a floating rig, these species would be subjected to discharges and that portion of the stimulation returns that cannot be collected. The DEIS addresses the impacts of these activities. The conclusions reached also apply to those deepwater species listed in Table 3-2.

DEC-63

Comment noted. In paragraph 4.213, change "will be lower" to "could be lower." By using a combination of selective cutting and herbicides, the quantity of herbicide used is less than if only herbicides are used. The intent of the mitigation recommendation is to reduce the potential hazard of herbicides on groundwater, surface water, and biota. Also, it was noted in paragraph 4.077 that by using selective control rather than just herbicides, the result is a more diverse and stable vegetation community.

DEC-64

Table A.1 - Item 50: change item 50 to item 50a and add item 50b. Item 50b should read: Emergency plans are also required under Part 255 of the New York State Public Service Commission's Rules on Gas Safety.

DEC-65

in paragraph D.011, insert as first bulleted regulation:

- New York Water Quality Standards, NYCRR Title 6, Chapter 10, §§: D-704.

Page D-3, Part B

DEC-66 { Article VII of the New York State Public Service Law should be included under this part.

Page D-9, D.032, D.033, and D.034

DEC-67 { Items D.032, D.033, and D.034 indicate areas that MUST be avoided. While we agree with the desirability of avoiding these areas, we believe these areas need further study. Therefore, replace "must" by "should" in this context.

It would be preferable to consider each area on a case by case basis to allow for balancing of all environmental concerns.

Similar consideration should be given to the use of the imperative "must" in other statements of paragraphs D.040 and D.041.

DEC-66

Appendix D, Part B (paragraphs D.008 to D.013), should have included a reference to Article VII of the New York Public Service Law. The purpose of the Public Service Law is the regulation of public utilities operating within the State. Article VII deals with the requirements for certification of environmental compatibility and public need for major electric and gas transmission facilities.

DEC-67

These comments address issues that can be resolved only after detailed further consideration, with the concurrence of the involved federal and state authorities. The proposed mechanism for resolution is the regulatory Task Force. The regulatory Task Force, composed of representatives from federal and state governments, would have ultimate responsibility for defining minimum federal and state standards to guide offshore development. This DEIS, for the purpose of providing a framework for discussion, contains a "Reference Program". It is not intended to suggest that the Reference Program guidelines are in any way binding or are more than starting points for the discussion. Each area and proposal will receive review on a case-by-case basis and will be compared against the guidelines. In certain special cases where there is an adequate demonstration of environmental acceptability, mitigation, and lack of suitable alternatives, the potential to allow pipeline construction in some of these areas could be considered. However, at the present time on a programmatic level, our impact analysis indicates that these areas must be avoided to protect the environment.



OPTIONAL FORM NO. 10 (Rev. 5-22-64) PREPARED BY THE U.S. ARMY CORPS OF ENGINEERS AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

TO: Pete Becker, Director, Environmental Impact Statement Division
FROM: Steve Hatch, Director, Field Services Bureau
DATE: January 9, 1981

SUBJECT: Trail Programmatic Environmental Impact Statement
Prepared by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency

We have completed our review of the Lake Erie EIS. Please incorporate the following statement into the final agency letter of response when you are preparing.

The State Historic Preservation Officer (SHPO) has reviewed the EIS for Lake Erie National Gas Reservoir Development. We have made comments on the EIS. The SHPO has identified several areas where the study is currently missing in the "Reference Program Study Action" which, although it is a statement of potential impacts, does not being located in the project area and the potential impacts the project would have on the area. We have identified several areas where additional review and comment in accordance with the regulations of the Federal Advisory Council on Historic Preservation (ACF) is needed. When further data becomes available.

If you should have any questions concerning the above comment, please contact Sandra Smith, Project Review Coordinator, at (216) 434-1116.

cc: Evan Vande

Read 1/14/81

ABW

WHP-1

Comment acknowledged. The Corps will continue to coordinate the cultural resources study with the State Historic Preservation Office and on a site-specific basis will coordinate in accordance with Corps regulations 15 CFR 220.225.



Pennsylvania State Clearinghouse

P.O. BOX 1000 - HARRISBURG, PA. 17103 - 0100
HARRISBURG, PA. 17103

January 19, 1961

February 19, 1961

George F. Johnson
Director, Office of
General Services
Department of the Army
The Pentagon
Washington, D.C. 20315
Reference: R.F. 1427
ATTN: Regulatory Practices Branch

Dear Mr. Johnson:

Enclosed are documents from the Pennsylvania Department of
Environmental Resources regarding the 1955 article "The Lake
and Reservoir Sanitation Improvement Act" which was passed
by the Pennsylvania General Assembly in 1955. The documents
include the original bill, the bill as amended, and the
final bill as passed by the General Assembly.

Sincerely,

John F. Johnson
John F. Johnson
Superintendent

3-42

Practice Drilling

The Department objects to the tone of the draft EIS as evidenced in the proposal to create a Joint Federal and State Regulatory Task Force to draft legislative and guideline standards for offshore development and to the recommendations regarding a single effort to manage the offshore program.

Our interpretation of the proposal is that the Federal Government is attempting to re-organize LEP boards and is trying to convert into the monetary imperialism in development of Lake Erie national gas. It would mean that by establishing a regulatory task force the Federal Government would gain a major role that they do not now have.

The responsibility to maintain uniformity lies with a committee set up by the Data Pools (and its Federal counterparts) that the states should not agree to. The bill also says that states should be more stringent than the one that might be chosen by the Federal Government.

The Federal Government should approve, as officially sanctioned by the Corps of Engineers, a permit to dam a company building, approval to erect a dam and building over. The permit should establish conditions that companies cannot provide and may allow development to AId the industry and reduce the overall capabilities with satisfaction and development. The Federal Government should establish a permit system for construction and approval on such plans of the companies should be subject to review and approval on such plans of the development of the company in their respective fields.

The same state laws should come heading, insurance, laws, contingency plans, etc. The only competitors should come from geologic and production potential. If industry has a future common to all states, they still have to operate very efficiently and need not worry about the or three different sets of state problems.

The Insurance against such the need for some type of Federal assistance from the Corps of Engineers and the Environmental Protection Agency "serve earlier; however, we disagree with the need and extent of expanding of "local agencies, municipal public - such as increasing of "local agencies, legislators, businessmen, etc." This is the more people involved in avoiding a Federal project. The longer it will take and the cost and delay may not be insignificant.

3-7 In addition several other proposed Federal regulations would cause controversy and loss.

068-3

See Topical Response Number 3 on the Task Force and Topical Response Number 4 on the Offshore Program Office.

DEB-3

We are not aware of any statements from this office concerning blanket approval or denial of drilling permits by the Federal Government. Based on the potential impacts as discussed in the OIEIS, the protection water quality and public health through the proposed siting process, the Great Lakes National Program Office believes that blanket permission to drill on the federal land is in the best public interest. The Federal agencies also have a responsibility to monitor and enforce the conditions of their permits.

The USDEA has issued general NPDES permits for oil and gas drilling in specific areas of the state of Mexico. Highly sensitive environmental areas, such as the Gulf of Mexico, are excluded. The permit holder, the oil and gas operator, can drill in a specific area providing that any drilling activity is not in violation of the permit conditions. The permit is specifically adhered to. Since the Great Lakes States have been delegated the authority to administer the NPDES program, the initial decision for issuance of general NPDES permits would be up to the individual state, with subsequent concurrence from EPA. EPA would then issue a general permit of such type has been issued in the Midwest States prior to date of publication.

5-031

in the Reference Program, it is assumed that the states would develop their own requirements for competitive bidding, rental fees, bonds, royalties, and other financial matters (paragraph 2.065). The more uniformity there is between the states' rules, the less chance there would be for disincentives to operators to lease from one state as opposed to another (paragraph 1.060).

2

[illegible]

4-7

DEIS does not propose any new Federal regulations but is based on existing Federal regulations and acts of Congress. (See Topical Response Number 3 on the Task Force and Federal Regulatory Authority.)

220-11
From legislation received in Pennsylvania, there is a good chance that some of our offshore funds will be issued by a Canadian Company. If a Canadian Company already has a part in this i.e. offshore rigs and facilities for disposal of oil, minerals and fluids i.e. the offshore wells, how will this affect the perpetuating principle of the Federal Government? Are the Canadian disposal of our wastes as they now fit in their facilities located in Canada?

The quantities of waste generated by the effluent wells seems high as shown in Table 2-13. The source of this data should be noted. None any of the data been obtained from Comstock town's. Some of the specific values shown are questionable. Specifically are the 21.7 percent of sanitary waste and 67.53 tons of domestic waste from the settling of the wells.

22 The Draft EIS recommends waste's dewatering, landfill, and/or other discarded materials be disposed of on-site in waste landfills to facilitate later deep disposal while not other well established. Presumably, there are no some injection wells available to accept leachate from the landfill. The EIS also states that the waste will be disposed of in a landfill to be constructed in the future. The EIS also states that the waste will be disposed of in a landfill to be constructed in the future. The EIS also states that the waste will be disposed of in a landfill to be constructed in the future.

In this chapter, there is a lot of information regarding oil usage and its domestic problem. Salt water should not be a problem. The report should compare the amount of salt generated by the drilling of wells for the American side with the amount of salt used in the Lake Erie watershed for some reason. In the state of Cleveland, Erie and Buffalo. Also, when discussing their water, the report mentions the location of 50 offshore from the C-10 and salinity along the Lake which discharge without chemicals into the Lake. The report also mentions that the salt water discharge is 100 times the volume of the report. Also, the report mentions that the salt water discharge is 100 times the volume of the report.

Table 1-23. The use of the value of produced water in the amount of 3 bbl. per million cubic feet of gas production appears high. In another part of the report (Table 1-22), the value of 3 bbl. of water was used. The report should list the amount of the value used.

Student Question: James (a

10-16 The Draft EIS should consider how accidents would be contained and cleaned up. Since there is a significant potential to affect public water supply, Indian and recreational activities, this should be given serious consideration in the

The Draft EIS indicates offshore drilling in Lake Erie will have a minimal effect on water quality. This assessment is supported by a report to the Seneca River Board titled "Offshore Drilling in Lake Erie," Publication #2, October, 1968. However, it must be recognized that there will be some water quality deterioration at least in the immediate area of the activity. Table 1-25 on page 1-7 lists some possible drilling effects that will impact on water quality. There also are some comments on potential impacts which would be very helpful.

Comments requested in Modification:

Comments Impact seems to be very good.

11-830

Foreign ownership or control of a company would not subject it to any special U.S. regulatory requirements by reason of its foreign ownership or control.

A Canadian-owned facility operating in U.S. waters would be subject to all the requirements applicable to any operations in U.S. waters. Any wastes classified as hazardous wastes under Subtitle C of RCRA would be subject, at least with respect to their generation and transportation in U.S. waters, to the RCRA hazardous waste regulations. Prohibitions on discharges of wastes into U.S. waters would also apply.

On the federal level, no indication has been received that Canadian firms would apply for permits to drill in U.S. waters or, if they were to drill, that they would export their wastes to Canada. This eventuality, therefore, has not been investigated in depth.

Shipment of wastes to Canada for disposal would be an international shipment. The wastes if classified as Subtle C Hazardous Wastes would, by reason of that classification, be subject to the requirements of Subpart E of the Part 262 Standards Applicable to Generators of Hazardous Waste, 40 CFR 9262.50 (1980). These requirements include notification to USEPA, conformance to USDOT container requirements, confirmation of delivery to the foreign consignee, and identification of port of departure from the United States.

Drilling fluid wastes are now excluded from Subtitle C regulation; consequently, no special RCRA requirements are imposed on their exports.

Other requirements, imposed by the U.S. and Canadian coast guards and customs authorities, could apply to export of wastes to Canada. In addition, it is assumed that some level of U.S. State Department and Canadian federal and/or provincial government review and approval might apply, in particular to any shipment of hazardous wastes.

Transport and ultimate disposal of wastes in Canada is subject to Canadian environmental laws and regulations. Canada would make its own determination as to what wastes should be classified as hazardous. Canadian federal (as contrasted to provincial) regulation is confined, for the most part, to importation and transportation. For wastes not classified by Canada as hazardous, such regulation is expected to be minimal.

Regulation of ultimate disposal of wastes is primarily under provincial jurisdiction. Although Canadian waste control regulations are still under development, it is expected that they will resemble, at least in a general way, those developed within the United States.

See Technical Response Number 13 on Waste Disposal.

References: phone conversations with John Skinner, Director of State Programs, USCEA; Samuel May, Acting Director, Waste Management, Environment Canada.

Quantities of wastes produced by each typical Reference Program will are presented in Table 1-29. References are presented in the associated text. If a waste value was not available, a worst-case estimate was made by the staff. A more accurate/accurate estimate of waste would be made on a site-specific basis.

See Technical Response Number 13 on Waste Disposal.

١٠٠-١٠٠

MF 8-13

REG-8 In paragraph 2.063, it was acknowledged that natural gas development in upland areas will continue to be developed regardless of any lake program. See Typical Response Number 21 on the Onland Alternative Program.

The so-called "oil and gas alternative" to drilling in Lake Erie is actually an alternative to all. Suppression and development of oil and gas around Lake Erie is becoming more and more consistent with its without the drilling.

[illegible]

much was said about loss of vegetation at pipeline and drilling sites and the resulting problem. In fact, more vegetation is often planted than was reforestation is required. As such, more vegetation is often planted than was the site prior to drilling. Also, the EIS states that officials will have no set return for a life of the project. In Pennsylvania, pipeline right-of-way is planned according to more terms provide no important site for forests as find for wetlands and other more birds.

Ex. 2. The degradation of water quality in streams was discussed as a function of watershed activities. Now give the volume of the pesticides compared with the way of

503-12 In this section, the second reason given discouraging diversions: drilling was that the shallow well site would have to be located a great distance inland from the lake shore in order for the weather to encounter offshore downland and fill the lake with water. To reach far away into the lake, the shallow wells would need to be drilled into the lake shore not far away.

Cond: first day. 1900

The Draft EIS should examine the potential conflicts with sales and growth operations. All such operations can either be treated as a manufacturing (truck) operation or they can be treated after a well to drilling and dewatering dry and abandoned. If a good and grow; operations to adjacent to a producing field, the exact oil growth operations should be coordinated because the natural gas reserves usually have priority. There should be other areas where the take which are not being

Q18-34 The draft EIS should say later on the proposed Lake Erie International Airport that the bridge and planning will have an gas development.

62-8360

DEB-19

The DEIS assumes that an onland program would be regulated by the three states and 23 counties in which development was occurring (see Appendix 2, "Regulation," paragraph 2.067). In this regard, the commenter is correct in stating that an onland program is more scattered and that offshore development has a restricted ownership (three states). However, the commenter's assumption that the onland program is primarily private is probably correct. However, the alternatives section of the DEIS is explicitly designed around environmental factors, not distribution. Including the Reference program, would offer a volume set of management possibilities and problems. Comparisons of management scenarios for the onland program are necessary only if the programs are unacceptably different. That is not the case for the onland program (see Appendix 2, "Regulation," paragraph 2.067).

06-530

In the DEIS it is stated that various measures to mitigate the onland program impacts of the proposed project will be implemented, such as revegetation, earth (Paragangas, 1986) and potential problems with the wetlands. The DEIS states that the revegetation program will be successful in providing suitable habitat for the wildlife species that will be affected. The revegetation program will be successful in providing suitable habitat for the wildlife species that will be affected. The revegetation program will be successful in providing suitable habitat for the wildlife species that will be affected.

942-17

The impacts of upland development on stream water quality would result from various materials such as hydrocarbons, salts, etc., and would be minor (Paragraph 4.027). The requested comparison would not change the conclusion reached in the DES. Additionally, the types of pollutants in herbicides and pesticides are chemically different from the types associated with upland gas development and, therefore, comparison of volumes has little meaning in prediction of impacts. Paragraph 2.032 is correct as stated.

WFR-22

22-848-22 222 is correct as stated.

5. **2006**

The Reference Program prohibits gas development in offshore sand and gravel areas and with this prohibition there is no conflict. The State, however, may determine that sand and gravel extraction should cease for gas development to occur and in that case the gravel would stop leading to sand and gravel depletion. If the State determines that sand and gravel extraction should continue, then no permit would be issued to sand and gravel operators (paragraph 1.Q7). The decision on which resource takes precedent is a state decision. We would point out that concurrent development of gas and sand and gravel in the same area would not be desirable. Concurrent development of sand and gravel with gas would result in increased erosion and dune degradation. We would see no problem with sand dredging over an associated well that is properly plugged. We also see no significant problem associated with gas fields being adjacent to sand and gravel areas; provided the gas field hardware is outside the sand and gravel boundaries. The gas field hardware includes the wellhead, separator, and other facilities located outside of the designated buffer zones or backdrops of the developed fields.

068-24

36ER-24 The Lake Erie Interconnect Cable has been considered in the DEIS (see paragraph 3.137, table 3-6, and paragraph 4.193); with proper planning of the lease area, there should be no difficulty. The lead federal agency for development of an EIS on the Interconnect Cable (U.S. Department of Energy) is also aware of the potential development of gas in Lake Erie (see also comments from GPU). If both projects were eventually approved, determinations could be made as to necessary buffer zones, maintenance procedures, etc., for each project so that one would not affect the other.

The major difference between idiosyncratic and state assumptions lies in the production function. The state assumption is that the production function is Cobb-Douglas, with capital and labor inputs. The idiosyncratic assumption is that the production function is Cobb-Douglas, with capital and labor inputs, and a third input, "technology". The idiosyncratic assumption is that the production function is Cobb-Douglas, with capital and labor inputs, and a third input, "technology". The idiosyncratic assumption is that the production function is Cobb-Douglas, with capital and labor inputs, and a third input, "technology".

[illegible]

(1) Cash bonus bid income	26.38 million
(2) Delay rental income	6.88 million
(3) Royalty income $(\$90 \times 10^6 \times 24.4 \div 1/8)$	274.5 million
Estimated total income to state	297.76 million

the estimated income of the state were higher than the staff's estimate of the IIS. This is due to (1) the state's higher estimate of cash bonus on the royalty rental income, and (2) use of an average price of \$24.39/MCF for the total production of 200 million cubic feet of gas which will be produced in the initial producing period of 20 years. The staff's estimate of the IIS was based on a price of \$24.39/MCF at a lower price than the average price of gas, and less than what will be paid at a lower price than the average. As a result, the amount of gas revenue received each year, and production will be less than what has been estimated in the IIS. The staff used this method of calculation of reporting income in the IIS.

Since the assumption that 512 wells could be drilled is realistic. As seen in

The average of 23 wells per year in Area IV and 27 wells in Area V, listed in Table 1-28. This is not a prediction of how many wells will be drilled or how many can be drilled assuming accelerated development. The assumption of "no new wells" was made because of the lack of information on future well prospects and to take advantage of maximum use of cost data base by the Reference Program. The Reference Program is not a prediction of future trends but rather a set of operational procedures frozen in time for purposes of testing the economic feasibility of various development alternatives. It cannot predict operator interest or other competitive aspects of development (paragraph 1.151).

-recognizing that in raising their visions concerning development, decision makers may "have to be highly selective," however, basing decisions solely on experiences may not accurately predict future events. Changing economies, changing energy priorities, gas prices, and political considerations are likely to affect the results of the study.

The time testing experience of 1959 and 1963 does not account for advances in technology, changes in the economic and energy situation, new pricing regulations, and the fact that the study was conducted over a period of two years. Interest in developing resources has changed over that period of time. Resources stored by operators are being developed in recent years.

James Earl Ray

The 2001 CES shows that the Communities of Forest-Dependent Peoples and Peoples of the Forests have been able to produce and realize programs from the economic and productive of their own land. This evidence is based upon the qualitative information that was collected from the 100 communities that participated in the study. It was found that the communities have been able to produce and realize their own programs and that the communities have been able to produce and realize their own programs and that the communities have been able to produce and realize their own programs.

[illegible]

Exercises of this kind would result from technical team effort applications, such as those in Table 1, are very appropriate and are often stimulating. However, it seems that any exercise of the state's future labor force will have to be more than a simple exercise. It will have to be based on past data, and on some systematic assumptions, especially for industrial development, and on some systematic assumptions, especially for industrial development. It seems that the state will have to be more than a simple exercise. It will have to be based on past data, and on some systematic assumptions, especially for industrial development, and on some systematic assumptions, especially for industrial development.

[illegible]

[illegible][illegible]

Essentially productive Glaciar-Pelicee are recognized as difficult to find in the lower basin areas. They are formed by primary depositional materials by permafrost phenomena which are limited in extent; ancient community sand bars. These individual units limit rather than by fluctuations of the stage and arrest, in distribution and, however, they are difficult to find even in the zone of separation, up-ice-side supracolonic amounts. These rich sediments, obtained in the area contain a high density of these deposits.

Welding Symbols

10 The Draft EIS shows the offshore area in the lake Erie portion of the Port of Oswego as consisting of 1,000 acres. We believe this figure to be in error and that approximately the 10,000 acres of offshore lands. The Draft EIS implies that the average bay shall include one acre of land.

⁶ Date of the terminology decline in the EIS is not used as substituted in Pendergast, i.e., Field, Secondary Term. The delay results in Pendergast's loss of \$1.00 per acre per year for the first three years and \$3.00 for the fourth to tenth year. The percent of property to be retained for Pendergast's has not been established. In the past, it was 2.5 percent and now probably at 5.0 percent.

3: The evidence does not reflect the fact that approximately one percent of the population would require a "special" permit, pursuant to Section 103 of the Regulations.

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

1. The following information was obtained from the records of the Department of the Interior, Bureau of Land Management, regarding the land owned by the United States in the State of Nevada:

028-26

[illegible]

DER-27

The staff's estimate of cumulative gas production from an average well in Clinton-Medina gas reservoir over its productive life of 20 years or more is 14 and 348 Mcf, respectively, for 350- and 280-day production scenarios. These production levels are only 87 and 70% of the state's estimate of cumulative gas production of 500 Mcf per acre. At the state's higher estimate of gas production, the economy of the development program would be even more distressing than reported in the DES.

Comment noted.

52-836

The DEIS relied on the following data sources: Ohio State has jurisdiction over 4457 mi² of Lake Erie waters (Steenison and Green et al. 1972); Pennsylvania has jurisdiction over 735 mi²; and New York has jurisdiction over 994 mi². Same et al. 1981.

52-836

[illegible]

DEA-11

Pennsylvania's bluffs recession and Setback Act (Pa. Const. Stat. Ch. 95 (1981)) provides that municipalities must provide for the protection of those shoreline resources that have been designated by the Commonwealth's Department of Environmental Protection as having a "substantial threat to the safety or progress of shoreline existing or future development." The reason for the rate of progressive bluff recession is that municipalities are not permitted to adopt suitable land use, health, and other regulations to provide standards for the location of structures and facilities in such bluff recession hazard areas.

REF-12

we have reviewed the supposititious changes cited in this comment and have elected not to change the titles or tables and verbiage in the paragraphs because the entire DGC's programmatic intent in measure, being based on various assumptions, were actually a no-proposed actions at this time. Thus, they are assumed will be assumed procedures, etc., and we are not predicting numbers of wells that will be drilled

- DER-32 { Figures Index and Figures for Figures 1-16, 1-17, 1-18 and 1-19 should include the words "proposed" and "to be."
- DER-33 { In Section 1.034, page 1-17, the statement that "the Clinton-Medina sandstones form a blanket deposit ... and will likely produce gas throughout its extent" is very misleading. The Clinton-Medina is not a blanket sandstone which "will likely produce gas throughout its extent." Gas is found in erratically distributed stratigraphic traps formed by porosity buildups in the sandstones.
- DER-34 { The Table Index and Table 1-1 on page 1-8 should be entitled "Lake Erie Land Area" (corrections underlined).
- DER-35 { The Table Index and Table 1-5 on page 1-27 should be titled "Estimated Production of Gas Per Average Well ..." (correction underlined).
- DER-36 { In Sections 1.001 and 1.002, the historical summary should mention that approximately 1,200 wells have been drilled in the Canadian waters of Lake Erie and two wells have been drilled in Pennsylvania waters without any significant harm to the environment.

- DER-33 As pointed out by the commenter, the statement on productivity of Clinton-Medina sandstones (second sentence, paragraph 1.034) can be misleading. A more correct statement would read as follows: "... the Clinton-Medina sandstones form an extensive deposit ... and will likely produce gas throughout its extent where conditions are favorable. The favorable conditions include a low-permeability caprock overlying relatively high-porosity zones." The third sentence (now fourth) is correct.
- DER-34 We have elected not to change the title of Table 1-1 because the entire document is directed at the assessment of offshore Lake Erie gas development and we do not believe that readers would assume the table includes offshore lands in, e.g., Lake Ontario, Delaware Estuary, etc.
- DER-35 The Table Index and Table 1-5 should be titled "Estimated Production of Gas per Average Well from Clinton-Medina Sandstones." The Table Index and Table 1-6 should be titled "Estimated Production of Gas per Average Well from Lockport Reefs" (corrections underlined).
- DER-36 Paragraphs 1.001 and 1.002 are parts of the introduction to the purpose and need for the proposed action. The purpose and need for the proposed action relate to the region of the United States bordering Lake Erie. The only reason that Canada was even mentioned in these sections was to indicate that all three states are aware of the Canadian activities and success and that this has, in part, led them to view aspects of Lake development. The need and purpose of the Reference Program is not influenced by the production from Canadian Lake Erie or by the two wells drilled offshore of Pennsylvania.

3142

Executive Summary

- [illegible]

Of course, much of the public interest has been satisfied by the fact that the program is not a failure.



STATE CLEARINGHOUSE

REGISTRATION OF PROFESSIONAL ENGINEERS AND ARCHITECTS

80-12-78

Collier, Henry J. Jensen
North Carolina State Board of Engineers
1115 Raleigh Street
Raleigh, North Carolina 27603

Attn: Regulatory Functions Branch

Re: Review of Environmental Impact Statement/Assessment
Title: "North Carolina State Board of Engineers - 1115
SAC Number: 80-027-0022" Northern State University

Dear Mr. Jensen:

The State Clearinghouse completed the review of the above
proposed environmental impact statement.

The environmental impact statement was reviewed by all interested State
agencies. Comments have not stated concerns relating to this report.

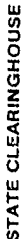
Thank you for the opportunity to review this statement/assessment.

Sincerely,

John G. Bunker
John G. Bunker
Administrative Officer

JTB:ms

cc: Mr. Mike Salata
Mr. Mary E. Jones



3523 3524 3525 3526 3527 3528 3529 3530 3531 3532 3533 3534 3535 3536 3537 3538 3539 3540 3541 3542 3543 3544 3545 3546 3547 3548 3549 3550 3551 3552 3553 3554 3555 3556 3557 3558 3559 3560 3561 3562 3563 3564 3565 3566 3567 3568 3569 3570 3571 3572 3573 3574 3575 3576 3577 3578 3579 3580 3581 3582 3583 3584 3585 3586 3587 3588 3589 3590 3591 3592 3593 3594 3595 3596 3597 3598 3599 3600 3601 3602 3603 3604 3605 3606 3607 3608 3609 3610 3611 3612 3613 3614 3615 3616 3617 3618 3619 3620 3621 3622 3623 3624 3625 3626 3627 3628 3629 3630 3631 3632 3633 3634 3635 3636 3637 3638 3639 3640 3641 3642 3643 3644 3645 3646 3647 3648 3649 3650 3651 3652 3653 3654 3655 3656 3657 3658 3659 3660 3661 3662 3663 3664 3665 3666 3667 3668 3669 3670 3671 3672 3673 3674 3675 3676 3677 3678 3679 3680 3681 3682 3683 3684 3685 3686 3687 3688 3689 3690 3691 3692 3693 3694 3695 3696 3697 3698 3699 3700 3701 3702 3703 3704 3705 3706 3707 3708 3709 3710 3711 3712 3713 3714 3715 3716 3717 3718 3719 3720 3721 3722 3723 3724 3725 3726 3727 3728 3729 3730 3731 3732 3733 3734 3735 3736 3737 3738 3739 3740 3741 3742 3743 3744 3745 3746 3747 3748 3749 3750 3751 3752 3753 3754 3755 3756 3757 3758 3759 3760 3761 3762 3763 3764 3765 3766 3767 3768 3769 3770 3771 3772 3773 3774 3775 3776 3777 3778 3779 3780 3781 3782 3783 3784 3785 3786 3787 3788 3789 3790 3791 3792 3793 3794 3795 3796 3797 3798 3799 3800 3801 3802 3803 3804 3805 3806 3807 3808 3809 3810 3811 3812 3813 3814 3815 3816 3817 3818 3819 3820 3821 3822 3823 3824 3825 3826 3827 3828 3829 3830 3831 3832 3833 3834 3835 3836 3837 3838 3839 3840 3841 3842 3843 3844 3845 3846 3847 3848 3849 3850 3851 3852 3853 3854 3855 3856 3857 3858 3859 3860 3861 3862 3863 3864 3865 3866 3867 3868 3869 3870 3871 3872 3873 3874 3875 3876 3877 3878 3879 3880 3881 3882 3883 3884 3885 3886 3887 3888 3889 3890 3891 3892 3893 3894 3895 3896 3897 3898 3899 3900 3901 3902 3903 3904 3905 3906 3907 3908 3909 3910 3911 3912 3913 3914 3915 3916 3917 3918 3919 3920 3921 3922 3923 3924 3925 3926 3927 3928 3929 3930 3931 3932 3933 3934 3935 3936 3937 3938 3939 3940 3941 3942 3943 3944 3945 3946 3947 3948 3949 3950 3951 3952 3953 3954 3955 3956 3957 3958 3959 3960 3961 3962 3963 3964 3965 3966 3967 3968 3969 3970 3971 3972 3973 3974 3975 3976 3977 3978 3979 3980 3981 3982 3983 3984 3985 3986 3987 3988 3989 3990 3991 3992 3993 3994 3995 3996 3997 3998 3999 4000 4001 4002 4003 4004 4005 4006 4007 4008 4009 4010 4011 4012 4013 4014 4015 4016 4017 4018 4019 4020 4021 4022 4023 4024 4025 4026 4027 4028 4029 4030 4031 4032 4033 4034 4035 4036 4037 4038 4039 4040 4041 4042 4043 4044 4045 4046 4047 4048 4049 4050 4051 4052 4053 4054 4055 4056 4057 4058 4059 4060 4061 4062 4063 4064 4065 4066 4067 4068 4069 4070 4071 4072 4073 4074 4075 4076 4077 4078 4079 4080 4081 4082 4083 4084 4085 4086 4087 4088 4089 4090 4091 4092 4093 4094 4095 4096 4097 4098 4099 4100 4101 4102 4103 4104 4105 4106 4107 4108 4109 4110 4111 4112 4113 4114 4115 4116 4117 4118 4119 4120 4121 4122 4123 4124 4125 4126 4127 4128 4129 4130 4131 4132 4133 4134 4135 4136 4137 4138 4139 4140 4141 4142 4143 4144 4145 4146 4147 4148 4149 4150 4151 4152 4153 4154 4155 4156 4157 4158 4159 4160 4161 4162 4163 4164 4165 4166 4167 4168 4169 4170 4171 4172 4173 4174 4175 4176 4177 4178 4179 4180 4181 4182 4183 4184 4185 4186 4187 4188 4189 4190 4191 4192 4193 4194 4195 4196 4197 4198 4199 4200 4201 4202 4203 4204 4205 4206 4207 4208 4209 4210 4211 4212 4213 4214 4215 4216 4217 4218 4219 4220 4221 4222 4223 4224 4225 4226 4227 4228 4229 4230 4231 4232 4233 4234 4235 4236 4237 4238 4239 4240 4241 4242 4243 4244 4245 4246 4247 4248 4249 4250 4251 4252 4253 4254 4255 4256 4257 4258 4259 4260 4261 4262 4263 4264 4265 4266 4267 4268 4269 4270 4271 4272 4273 4274 4275 4276 4277 4278 4279 4280 4281 4282 4283 4284 4285 4286 4287 4288 4289 4290 4291 4292 4293 4294 4295 4296 4297 4298 4299 4300 4301 4302 4303 4304 4305 4306 4307 4308 4309 4310 4311 4312 4313 4314 4315 4316 4317 4318 4319 4320 4321 4322 4323 4324 4325 4326 4327 4328 4329 4330 4331 4332 4333 4334 4335 4336 4337 4338 4339 4340 4

December 30, 1980

Colonel George P. Johnson
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Acron: Acquisitory Functions Branch

RE: Review of Environmental Impact Statement/Assessment
 Title: Draft Programmatic Environmental Impact Statement-U. S. Lake Erie
 Natural Gas Resource Development, 11 Northern Ohio Counties
 S&I Number: 36-422-0010

Dear Mr. Johnson:

Our office has recently notified you that the review of the environmental impact statement/assessment stated above has been completed.

We have now received additional comments from a reviewing agency which we believe should be taken into consideration as you proceed with your application process.

Thank you for the opportunity to view this statement/assessment.

Sincerely,

Judith Y. Brachman
 JUDITH Y. BRACHMAN
 ADMINISTERING OFFICER

578.279

THE UNIVERSITY OF CHICAGO

29

Final _____ Summary, full copy to follow

U.S. Labor Env. Optimal Race Science Development

1st	Ohio Environmental Protection Agency / <u>Land from State</u>	Manager of Capital Resources
	ALSO: Bob Wolfe	
2nd	Department of Natural Resources / <u>Land from State</u>	
	ALSO: Mike Gals	
3rd	Historic Preservation Office / <u>Land from State</u>	
	ALSO: Bert Zeman	
4th	Department of Transportation / <u>Land from State</u>	
	ALSO: Charles Tripp	
5th	Department of Economic & Community Dev. / <u>Land from State</u>	
	ALSO: Bob Freeman	
6th	Department of Health / <u>Land from State</u>	
	ALSO: Bob Schuch	
7th	Department of Energy / <u>Land from State</u>	
	ALSO: Chris Schimmer	
8th	Department of Agriculture / <u>Land from State</u>	
	ALSO: Ed Dwyer	

[illegible]



STATE CLEARINGHOUSE

STATE CLEARINGHOUSE • 370 N. 3rd St., 3rd Floor • Harrisburg, PA 17102 • 717/783-1400

February 4, 1981

Colonel George P. Johnson
Department of the Army
Buffalo District Corps of Engineers
178 Western Street
Buffalo, New York 14207

Re: Regulatory Function Branch

Re: Draft Programmatic Environmental Impact Statement, U. S. Lake Erie
Basin Comprehensive Management Study, Regulatory Function Branch
State Application Identifier Number (SAI): 30-022-2010

Dear Applicant:

Our office has recently notified you that the July review has
been completed. The review was conducted by the Regulatory Function
Branch that you presented with an application to the appropriate
funding agency.

We have now received additional comments from a reviewing agency
which we believe should be taken into consideration as you proceed with
the application process. (See attached)

If you have any questions concerning the above, please contact
our office. (610) 462-7461.

Sincerely,

John G. Bradman
John G. Bradman
Administering Officer
STATE CLEARINGHOUSE

ODNR

Ohio Department of Natural Resources

Forest Service, Bureau of Land Management, 600 North Zeeb Road, Columbus, Ohio 43260-0001

January 20, 1983

Colonel George P. Johnson
District Engineer
U.S. Department of Army Corps of Engineers
1700 Engineers Street
Buffalo, New York 14207

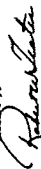
RE: DAMPT ENVIRONMENTAL STATEMENT - U.S. LAKE ERIE NATURAL GAS DEVELOPMENT

Dear Colonel Johnson:

The Department of Natural Resources has completed a review of the above-referenced environmental statement. The attached comments are the result of an independent preliminary review process conducted by the Office of Outdoor Recreation Services.

We appreciate the opportunity to provide these comments. If you have any questions, please do not hesitate to contact my office.

Sincerely,


ROBERT V. TEATER
Director

RM/24

Attachment

cc: JAMES T. Brinkman, Assistant Chief Officer
State Game Commission

AMERICAN INDIAN BUREAU - REPORT ON NATURAL GAS

ODNR

Ohio Department of Natural Resources

Public Service Building, Columbus, Ohio 43260-1172

December 17, 1980

Col. George P. Johnson, District Engineer
U.S. Army Engineer District, Buffalo
Buffalo, NY 14201

Dear Colonel Johnson:

I am writing you in reference to the recently released Draft Environmental Impact Statement (EIS) for the proposed Erie Natural Gas Research Development Project, which is located in Erie County, Ohio. The EIS is entitled "U.S. Lake Erie Natural Gas Research Development Project, with comments on Summary Items 5.001-1, 5.015, and 5.017."

5.001-1. The establishment of a state/federal regulatory task force is not necessary and would add another layer of red tape to the process. The task force would be composed of representatives from the three states and the Congress. One requirement of the task force is that it would take several years to develop the legislation required to develop all administrative aspects of the project. The task force would also be required to develop a regulatory system for the project. The task force would also be required to develop a regulatory system for the project. The task force would also be required to develop a regulatory system for the project.

5.015. In contradiction to the EIS, Ohio presently has no authority to lease gas in Lake Erie. This authority was established by the Federal Energy Regulatory Commission (FERC) in 1974. The FERC has the authority to lease gas in Lake Erie. The FERC has the authority to lease gas in Lake Erie.

5.017. We would object to any federal directive which tells us to develop a regulatory system to lease gas in Lake Erie. We would object to any federal directive which tells us to develop a regulatory system to lease gas in Lake Erie. We would object to any federal directive which tells us to develop a regulatory system to lease gas in Lake Erie.

In summary, the state/federal task force as proposed in the EIS is unacceptable to Ohio.

Robert L. Latta
DIRECTOR

RLT/law
cc: Pennsylvania
New York

U.S. DEPARTMENT OF THE INTERIOR - BUREAU OF LAND MANAGEMENT

See Technical Response Number 3 in the Task Force and Federal Regulatory Authority. In paragraph 1.002, we had advised that Ohio policy concerning offshore gas development is a matter of current legislative debate. The statement was intended to mean that Ohio does not have legislative authority to lease gas in the Ohio's offshore waters. The statement concerning debate at various proposals in the Ohio's offshore waters was intended to mean that Ohio's offshore waters are not under federal control. The statement was intended to mean that Ohio's offshore waters are not under federal control. The statement was intended to mean that Ohio's offshore waters are not under federal control.

Author's Address: Department of Psychology, University of Illinois at Chicago, Chicago, IL 60607-7181, USA.
E-mail: shawn@uic.edu

J. LAY OFF AFTER 66 MONTHS OF SERVICE

U.S. District - U.S. District V, January 1, 1911

Other state law, Ohio Revised Code, Title 29, Chapter 1505, authority is given to the Department of Natural Resources to issue permits or make leases to parties making application for permission to remove sand, gravel, stone, etc., and other materials or substances from and under the bed of Lake Erie. We have the technical expertise needed to develop all administrative aspects of permitting, replacing, and managing drilling of state-owned gas resources in Lake Erie.

The key to a successful offshore well-drilling program is coordination. In light of the several Federal, State and local agencies that could be involved successfully in the program, interagency coordination is imperative. However, this process should be ancillary to the operations of the responsible state or local agency. The program should be implemented as desired.

See Topical Response Number 3 on the Task Force and Federal Regulatory Authority, and Topical Response Number 4 on the Offshore Program Office.

- ODNR-16 Page 1-34, 1.059 - Included in the offshore sensitive areas should be the leased salt mining areas and future projected areas for mining under the lake in the Cleveland and Painesville, Ohio, areas.
- ODNR-17 Page 1-36, Table 1-9 - It is not believed that the expertise to coordinate all environmental and gas-related activities can be assembled under a single designated state agency (offshore program office). Each state should develop the coordination program which functions best within the state's governmental framework.
- ODNR-18 Page 1-37, 1.063 - The creation of a regulatory task force representing the three states and appropriate federal agencies is unnecessary. Each state has its concerns and conditions for development of gas from the lake and a set of regulations and permits which would be suitable for the entire lake region might not be appropriate for any individual state. Lease forms, permit forms are best left up to individual states.
- ODNR-19 Page 1-39, Table 1-10 - This table is an excellent summarization of environmental standards and should form a framework for individual state rules and regulations.
- ODNR-20 Page 1-46, 1.073 - This assumption of the Reference Program that the lake gas will be a commodity marketed through interstate commerce is not valid for the State of Ohio, and therefore, pipelines would be exempt from U.S. Department of Transportation regulations.
- ODNR-21 Page 1-51, Table 1-16 - Leasing areas: The smallest leaseable unit of one minute latitude by one minute longitude (tract) is not recommended. A minimal leasing unit should cover the area within 5 minutes longitude (Block) except along the southern, northern and eastern periphery of the Lake Erie lease area where the lease blocks are reduced in size.
- ODNR-22 Page 1-53, 1.092 - Throughout the DEIS there is a constant referral to Lockport Reefs as an important target horizon for the production of gas. Assumptions are made that it is a more productive and more economic formation to explore. Examination of the maps "Oil and Gas Fields of Ohio, 1974" published by the Ohio Division of Geological Survey indicated discoveries are widely separated and generally involve small fields. Reference is made to Figure 1-1 in which 14 lease areas are recommended. (The text states there are 16). Areas VIII, XII, XIII, and XIV are specifically designated as Lockport Reef Areas. On what evidence are they defined? Particular reference is made to Area XIV located adjacent to Lorain County where there is no proven Lockport production. With due respect to the Mesolella study of 1978, this is a misleading projection.
- ODNR-23 Page 1-103, 1.142 - The statement "that since no suitable empirical data are available with reference to anticipated hazards or accidents from existing offshore freshwater natural gas development programs" does not take into account the natural gas development program in the Canadian portion of Lake Erie.
- ODNR-16 The state of Ohio holds the mineral rights beneath the Lake offshore of Ohio and has the option of balancing one resource against the other. The state may, at its option, prohibit development of these areas.
- ODNR-17 See Topical Response Number 4 on the Offshore Program Office. The necessary technical expertise would remain in the appropriate state permitting agency. The offshore office is a coordinating office.
- ODNR-18 See Topical Response Number 3 on the Task Force and Federal Regulatory Authority. Development of uniform minimum standards would still allow latitude for each state's particular concerns. From the standpoint of resource development, it would appear that all three states have similar concerns and interests. Based on the comments received on the DEIS from all three states, it also appears that they share common goals of environmentally safe extraction of gas resources from the Lake. The common goals and concerns provide an excellent base upon which to initiate uniform procedures.
- ODNR-19 Table 1-10 along with Table 1-7 essentially form the framework of the Reference Program. The cited Table 1-10 assumes the adoption of many of the Reference Program guidelines contained in Appendix D of the DEIS.
- ODNR-20 The ultimate destination of natural gas produced from Lake Erie is not known at this time. However, if the gas enters a pipeline in Ohio, is commingled with interstate gas, and then leaves the state, it is generally considered interstate gas and is under the jurisdiction of the Federal Energy Regulatory Commission (FERC). The final decision on whether the gas is inter- or intrastate natural gas will have to be made by FERC.
- ODNR-21 Reference Program lease areas were delineated to identify the amount of land that would be drilled by one operator in 10-year period (primary lease term). See Leasing Strategy (paragraphs 1.085-1.090).
- ODNR-22 The economic advantages of exploring and producing from the Lockport reefs rather than the Clinton-Medina sandstones relates to the superior production characteristics and success ratio of the reefs and not to their overall extent or long-term production potential. These advantages and other pertinent discussions (including evidence on which the reefs were defined) can be found in the following paragraphs in the DEIS: 1.033, 1.034, 1.046, 1.087, and 1.093.
- The point was also made that there is an apparent discrepancy between lease areas shown on Figure 1-1 (14) and those discussed in the text (16). There is no discrepancy because Lease Areas XIII and XIV in Lockport will, when depleted, be redrilled to the Clinton-Medina sandstones and be reassigned as Lease Areas XV and XVI (see also paragraph 1.101 and footnotes "e" and "f" on Figure 1-18).
- It may appear misleading, but the generalized locations of potential Lockport reef structures were based on a number of factors as discussed in detail in paragraphs 1.034-1.036, and 1.092. It is well documented throughout the draft that this is a "reference" program based on a number of assumptions, including those for gas resource location and production estimates. They are not intended to be considered absolutely accurate.
- The seismic survey was not performed for the Corps, USEPA, or Argonne (the seismic survey was performed by Petty-Ray Geophysical Operations, Houston, TX--paragraph 1.092). Petty-Ray is aware of the use of our interpolation, did not object to its use, and did not comment on our interpolation. Ultimate definition of location belongs to the industry and states. The Corps and USEPA are not oil and gas developmental agencies.
- ODNR-23 See Topical Response Number 2 on Impacts of Accidents: Consideration of Canadian Experience.

Q204-25 Page 1-112, 1-142 - It is believed the cost of aquifer remediation of waste incinerator sites and treatment facilities can be considerable and should be included in the total cost of developing Lake Erie gas.

Discussion

Q204-26 Page 2-15 to 2-17, 2-25 to 2-27 - Based on realistic hydrology, region stream, and aquifer characteristics, the aquifer is not adequately covered.

Q204-27 Page 2-15, 2-26 - Department's commercial trial wells have had problems with gas production. It is more or less a problem to get gas out of the wells. The gas production is not as high as the trial wells. The gas production is not as high as the trial wells.

Q204-28 Page 2-17, 2-18 - Concerning water intake, the Diamond (Salt) Intake is not as high as the trial wells. The water intake facility was designed for Lake Erie water.

Discussion

Q204-29 Page 4-42, 4-49 and 4-50 - The statement on remedial efforts is misleading for the most part. The statement on remedial efforts is misleading for the most part. The statement on remedial efforts is misleading for the most part.

Discussion

Q204-30 Page 2-4, 2-27 - It is the Department's position that a surface (surface) water flow along the shoreline is not adequate. The water of the surface water flow is not adequate. The water of the surface water flow is not adequate.

Q204-24

The staff agrees that the cost of onshore transportation of waste between dock and processing facility should be included in the total cost of developing Lake Erie gas. This cost would not affect the economic decision of developing U.S. Lake Erie natural gas. The cost of onshore transportation of gas from the waste areas of New York, Pennsylvania, and Ohio is estimated at \$2017 million respectively. Even with a total disposal and treatment cost and \$2017 million respectively, the present value gain of the operations of the development program would be \$206 million, and the program would still be economically viable.

Comment noted.

Q204-25

Comment noted. Unless specifically prohibited by the state, we have assumed the use of trawl nets in the future and have recommended use of deflection nets. This is consistent with the case analysis performed for the Reference Program (see also response 001-17).

Q204-26

Information update noted. The information is correct as referenced and the impact assessment remains unchanged with the new information.

Q204-27

Intermingling of aquifers in the vicinity of old wells will locally degrade the quality of aquifers beneath Lake Erie. Although the area of Lake Erie under existing aquifers is small, the potential for further water quality degradation of the aquifer underlying the Lake may be current use. The preglacial buried valley underlying the Lake may be current use. The preglacial buried valley underlying the Lake may be current use. The preglacial buried valley underlying the Lake may be current use.

Q204-28

See response DEC-8.

Office Historic Preservation Office

A-93 SERVICE COMMENTS
S.A.L. No. 34-172-001

Brands K13 - 0.5, Lobo Erie Natural Gas Research Center

As noted in the EIS, the proposed Lake Erie Recreational Can Resources Development has potential for affecting cultural resources of possible significance. These resources include prehistoric and historic sites on land and underwater.

The Ohio Bluebird Preservation Office would like the opportunity to review and comment upon the cultural resources study.

In addition, the Regional Registry/Architecture and Regional Archaeological Preservation Offices of the Ohio Historic Preservation Office which cover counties that will be affected by the proposed development should be contacted for input into the cultural resources study. These offices are listed below:

Lucy!

Bergin 12A - Ted Liggett and Cynthia Bergin, Center for
Archival Collections of Bowling Green State University, 324
Flower, University Library, Bowling Green, Ohio 43403.
(419) 372-2611. Comments: Delancey, Falcum, Henry, Miller,
Olson, Sandberg, Williams, and Wood.

Region 23A - Rita Zimmerman, Mephton Reserve Biological Society,
10437 East Boulevard, Cincinnati, Ohio 45244, (216) 721-5722.
Countries: Antarctica, Guatemala, Eritrea, Guinea, Burma, Laos, Lesotho,
Mozambique, Norway, Portugal, Switzerland, and Tanzania.

20190428

Angeline LA - C. Michael Pratt, University of Toledo, Department of Anthropology, P.O. Bancroft Avenue, Toledo, Ohio 43624.
(419) 537-2740. Counties: Erie, Huron, ~~Lima~~, ~~Lucas~~, ~~Walton~~, ~~Wayne~~, ~~Wood~~.

Boxing 2A - Alfred Lee, Cleveland Museum of Natural History,
Water Oval, University Circle, Cleveland, Ohio 44106, (216)
731-4400. Counselor: John Wozniak, Cleveland Heights, Ohio,
8951 Glen Ridge, Portage, Summit, and Cuyahoga.

7-ODHO

Comment noted. The Buffalo District will coordinate the cultural resources technical report with the State Historic Preservation Office and appropriate regional offices. Coordination regarding specific applications would also be accomplished in accordance with Corps of Engineers permit regulations 33 CFR 320-329.



NEW YORK STATE PARKS & RECREATION Agency Building 1 Empire State Plaza Albany New York 12238 Telephone 518/474-0445
One Empire State Plaza

January 29, 1981

District Engineer
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, NY 14207

Attention: Regulatory Functions Branch

Dear Sir:

We would like to thank you for the opportunity to review: Draft Programmatic
Environmental Impact Statement U.S. Lake Erie Natural Gas Resource Development.

In reviewing the document we found several items which should be brought to
your consideration for preparation of the finalized document:

NYPR-1 1. New York State Office of Parks and Recreation operates several Parks
in western New York State that have a long history related to gas
exploration and development. Further, existing and proposed lease
programs for these facilities are expected to make available con-
siderable quantities of natural gas.

Existing leases are operating at Allegany, Davison and Lake Erie
State Parks. I have included a short history of the Agency's program
and its objectives together with a sample copy of our lease documents
and a sample lease.

NYPR-2 Your maps of recreational facilities should be updated to reflect
Parks and Recreation facilities operated by this Agency.

NYPR-3 2. Enclosed also is a statement from the State Historic Preservation
Office, Field Service Bureau to be incorporated into your review.

Thank you for the opportunity to review this important issue.

Sincerely yours,

Don J. R. Butner

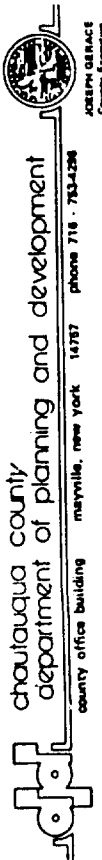
DR. PETER J. R. BUTNER
Director of Environmental Management
NY State Office of Parks and Recreation
Empire State Plaza, Agency One
Albany, NY 12238
(518) 473-4817
474-0445

One Empire State Plaza

NYPR-1 The statement concerning leasing of state parks for natural gas development is
noted. Although the leases will likely result in considerable quantities of
gas, the regional gas situation as described in the DEIS and this Final EIS
would still remain that of a net importer (refer to Topical Response Number 12
on the Need for Natural Gas). See Topical Response Number 10 on the Reference
Program Concept and Topical Response Number 11 on the Onland Alternative Program.
The Lake Erie Reference Program would not affect or be affected by the state
park leasing program.

NYPR-2 The DEIS contained a generalized land-use map of the shoreline (Figure 3-3)
showing broad areas generally used for agriculture, recreation, public use,
etc.; however, due to the extent of the Reference Program area and the large
number of facilities in the three states, no attempt was made to show all the
specific facilities for recreation. If gas development is found environmentally
acceptable in principle and if applications are received, each specific proposal
would be reviewed. At the time of specific proposal review, those recreational
facilities in the potential impact area would be identified and coordination
with the state would occur. The maps on documents submitted by New York State
Parks and Recreation will prove useful during the review of applications.

NYPR-3 See Response NYHP-1.



Chautauque County
Department of Planning and Development

County Office Building Mayville, New York 14757 Phone 716-733-4296

JOSEPH GERACE
County Executive

January 5, 1981

Colonel George P. Johnson
Buffalo District
Corps of Engineers
1776 Niagara St.
Buffalo, New York 14207

Re: Draft Programmatic Environmental
Impact Statement; U. S. Lake Erie
Natural Gas Resource Development

Dear Sir:

A review of the programmatic statement suggests a Herculean work effort with the majority of general environmental issues addressed.

CCD-1 The major and first issue, of course, is the economic need for the gas resources under Lake Erie. I believe that we should allow free market conditions to dictate when and if they are necessary.

CCD-2 There are a number of site specific issues which probably cannot be addressed in a document such as the one that has been presented. I assume, in reviewing the draft document, that site specific issues will still be under scrutiny and EIS procedures.

CCD-3 The assumption that the three major cities on Lake Erie will be the "work ports" for the majority of the vessels serving the gas development program is probably correct. The majority of the Lake Erie coast communities will not see great economic impacts or jumps in employment. However, I cannot help but believe that during the whole process of utilizing the gas resources from under Lake Erie that there will be an increase in traffic at small harbors used to support the system of larger vessels and activity. What will be these demands? What additional facilities will be needed locally? Who will be responsible for responding to emergency conditions? What will be the local governments' responsibility in case of emergency?

CCD-4 This latter question is asked because, based on experience along the shores of Lake Erie and Chautauque County, some emergency efforts on just one incidence has seen tens of thousands of dollars in public and private volunteer time spent in emergency efforts with people on Lake Erie. Will the gas industry, the Coast Guard or the states in any way augment the existing emergency systems? Based on the present pattern of coverage of the shore of Lake Erie and Chautauque County's experience, someone must be responsible for the creation of an emergency program. It cannot be left to impact totally on the volunteer systems which basically serve the majority of the coastline. Even when viewing the emergency preparedness of the County of Chautauque, the type of equipment and/or facility needed to respond is limited or does not exist. One incidence off the shores of Chautauque County in Lake Erie received national attention. Out of curiosity, this office attempted to assign a cost to the emergency effort which took place. It should be noted that

CCD-1 Comment noted.

CCD-2 See Response CCD-7.

CCD-3 We have projected that, for the Reference Program, four work ports would be needed to handle an estimated 25 vessels, eight of which are drilling rigs (see paragraph 5.036). At the current programmatic level of study, there is no indication that smaller ports would be used by operators. It is more likely that operators would choose to maintain their facilities in close proximity to one another in major ports since the major ports would require less modification than smaller ones. Scattering their operations along the shoreline would tend to hinder the operations. However, given the total number of vessels projected for the program, any use of smaller harbors would create only minor impacts. Some of the locational constraints that pertain to Reference Program facilities are given in Table 1-34. There are constraints that would lead to the conclusion that operators are likely to centralize operations in major ports. In regard to emergency conditions, see Topical Response Number 7 on Contingency Plans and Cleanups.

Colonel George P. Johnson

-2-

January 5, 1981

CCD-4

We were unable to engage the assistance of federal or state agency in terms of manpower for this effort beyond radio vectoring. Based on manpower, time, equipment utilization, equipment lost, it is felt that no less than \$35,000 and possibly as much as \$65,000 would have been the cost of the operation if it had been "paid for." It would seem that within the revenues to be drawn from the specific states that appropriate equipment and augmented manpower programs could be created so that emergency efforts do not become a cost to the local municipality.

CCD-5

How many miles of major new transmission line will be needed to collect the gas from the landfill sites? A review of material on hand in this office would indicate that one of the proposed landfills in Chautauque County could possibly be served by existing systems. Based on our files, however, the second or western landfill site would probably take new pipeline construction in order to put the proper sized lines in to serve the landfill site. This question has to be raised along the total shoreline.

CCD-6

This office has just completed a review of the New York State Public Service Commission's Case 80007, Lake Erie Generation Station. Within the siting process for this facility, was rather a detailed examination well beyond that of your programmatic effort dealing with Lake Erie currents along the southern shore and in particular along the shores of Chautauque County. Along with this hearing process and found in the files of this department are periodic aerial photographs of the shoreline of Lake Erie. All aerial photography of the offshore area of the City of Dunkirk shows a plume from the outfall of the Dunkirk sewage treatment plant. All photography finds this plume ranging thousands of feet from the outfall point. Based on the aerial photography and the work done on the Lake Erie Generating Station, we must raise the following question. Is the one-mile buffered distance down current from the City of Dunkirk's water intake adequate distance to restrict well construction and landfill facilities? We do not pretend to know what the distance should be but we strongly question whether a one-mile buffer zone off this water intake will provide fail-safe protection of the water supply not only for the City of Dunkirk but for its surrounding communities. We look to the City of Dunkirk's system as the primary water system drawing water from Lake Erie for a large portion of the coast population of Chautauque County.

CCD-7

Under the programmatic approach, the landfill sites do not seem to be a problem. However, site specific actions will not hold to such an innocent review and it is the assumption of this reviewer that landfill sites will be subject to an EIS process. If this assumption is incorrect, this office reserves the right to make further comment upon response to the question.

CCD-8

It would seem appropriate that in the creation of the permitting process that because of the unknowns, a small royalty be charged or a portion of the bid money be placed in an emergency fund for restoration of shoreline damages or littering caused by the offshore drilling activities. If created as a royalty fund, it should be created in such a manner that it would become a deposit which would be returnable to the parties concerned at the conclusion of the program. The funds to be held in such a manner that they may be actively drawing interest, if the royalty fund remains untapped for corrective activities, it is to be returned to the industry. These funds to be used when it can be proven that shoreline

CCD-4

It is our understanding that the incident cited in this comment involved the stranding of five individuals in stalled boats in the ice off Dunkirk in 1978. An emergency of this type would not be covered under any pollution cleanup procedures of the federal or state governments. However, the cited incident is given only as an example to point out potential local costs of cleanup during an emergency. See Topical Response Number 7 on Contingency Plans and Cleanups.

Additionally, among the responsibilities of the proposed regulatory Task Force is that of recommending a minimum set of federal and state standards. It would be the responsibility of the Task Force to recommend how monitoring and enforcement decisions should be made, whether local land-use controls should be revealed, whether existing emergency systems should be augmented, and how the burdens of the program on local communities should be distributed.

CCD-5

According to pipeline maps of the Lake Erie region, the area is well served with a dense network of natural gas pipelines. Some additional transmission lines may have to be constructed depending upon the location of production fields, gathering lines, and onshore lines; but the exact number or extent of these additional pipelines cannot be determined at this time.

CCD-6

See Response DOS-1, Topical Response Number 8 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs.

CCD-7

See Response EPA-1.

CCD-8

The recommendation is acknowledged. The subject of royalties and other fees associated with mineral development is not within the regulatory jurisdiction of the federal government in regard to Lake Erie. Development in Lake Erie--in which the states own the mineral rights and can collect royalties, lease fees, etc.--is different from development on federal land.

Colonel George F. Johnson

10

January 5, 1961

C24

Enclosed please find 10 copies of the report on the 10th anniversary of the signing of the National Security Agency's (NSA) charter. The report is being distributed to all interested parties in order to provide them with a better understanding of the agency's role and its contribution to the national security. The report is being distributed to all interested parties in order to provide them with a better understanding of the agency's role and its contribution to the national security.

In closing, I commend the staff of the Environmental Protection Agency for their efforts in the past year. I am sure that your continued efforts will result in a more effective program.

Very truly yours,

J. Edgar Hoover
John E. Hoover, Director
Federal Bureau of Investigation

RE: 100

Mr. Joseph G. Thompson, Deputy Director
Mr. L. B. Nichols, Chief, Security Administration
Mr. J. Edgar Hoover, Director, Federal Bureau of Investigation
100 Bureau of Environmental Conservation



OFFICE OF THE
COMMISSIONER OF
REVENUE
One Ash Street, Room 100
Boston, Massachusetts 02108
Tel. 617-725-1100

Re: D. 5. Army Corps
of Engineers

Jan 6, 1981

Jan 6, 1981

Col. George F. Johnson
District Engineer
U.S. Army Corps of Engineers
1775 Niagara Street
Buffalo, NY 14207

Attention Regulatory Function Branch

Dear Colonel Johnson:

The Erie County Department of Health has reviewed the Draft Programmatic Environmental Impact Statement (EIS) for the proposed drilling activities and development. We request that the following be made part of the Environmental Impact Statement relating to the subject.

Environmental problems and potential problems have developed in Erie County during the drilling activities. There has been a recent increase in drilling activity in our county, and there have been reports of violations of the drilling regulations. The Department of Health is currently reviewing the problem and will be in touch with you regarding the drilling activities.

The Department of Health is currently reviewing the problem and will be in touch with you regarding the drilling activities. The Department of Health is currently reviewing the problem and will be in touch with you regarding the drilling activities.

With one of the gas production problems land-based problems associated, it seems premature to consider off-shore drilling activities. Proper disposal of waste from offshore drilling sites is presently a relatively ineffective due to the lack of adequate regulations and insufficient handling of environmental problems.

We believe the U. S. Army Corps of Engineers, the U. S. Environmental Protection Agency, and the Pennsylvania DCR would be unable to handle the drilling activities for the gas production. The Department is currently reviewing the problem and will be in touch with you regarding the drilling activities.

The Department believes options of offshore drilling activities are ready, available proper waste disposal sites and proper handling of the drilling sites. Also, there must be acceptable development construction and

CD-1

CD-2

CD-3

See Topical Response Number 13 on Waste Disposal.

CEH-1

CEH-2

CEH-3

where state authorization is required for the same activity covered by Corps administration. Without prejudice to the right of the applicant to be reinstated processing if submitted to the state for review (paragraph 1.071). Thus, applicants would have to obtain the state permits and leases necessary for gas development activities.

Statement of position is noted. See Topical Response Number 13 on Waste Disposal.

100

We also believe a contingency plan should be developed before any drilling in the lake commences. Equipment and materials should be readily available to the industry to clean up any spills that occur.

WEEK 17: 5, 2004

Presently, there is no suitable on-land subsurface disposal well in operation in the area. Also, presently no question if there are areas in the county that might be readily available and suitable for on-land spray irrigation of waste such as those mentioned above.

See "Topical Response Number 3 on the Task Force and Federal Regulatory Authority." Collectively, establishment of any Task Force prior to the final EIS is not possible. First, a decision concerning environmental acceptability in principle must be made. The public is being offered input into guidelines through the review and comment procedures for this EIS. Public input also included the concerns raised during the formal public hearings which were held prior to the writing of the DEIS.

odds in the data. It is

the 15-day time frame is the time it would take to

Col. George P. Johnson
Page 3
January 6, 1981

CEH-8 [fifteen day figure arrived at? Did it take into account the possibility of failure at the "end of the season" when wind, ice formation, etc., would possibly lengthen the time until the site could be controlled? How would repairs be effected (for example, if a relief well were needed) in the winter if the late very ice bound?

Page xi, S.021

CEH-9 [Seismic active areas have been identified. The identification process apparently was with respect to predicting damage to lines and wells with possible subsequent environmental problems.

What is the probability of causing or triggering earthquakes by the removal of the natural gas and the release of pressures? What is the likely magnitude of any earthquake(s) and the damage that may be caused? Would drilling companies be held liable?

Page xi, S.023

CEH-10 [The proposed end of the drilling season is October 31. Does this mean all equipment will be off the lake by October 31 or does it mean drilling will cease on October 31? Does this give adequate time to take care of any problems (such as an uncontrolled release of hydrocarbons) before ice becomes a problem? Should the drilling season open on the "average" ice off condition in the spring on April 1 or should the drilling season start at the latest recorded date of ice in our area of Lake Erie?

Page xii, S.031

CEH-11 [The reaction of polyethylene glycol and chlorine should be taken into consideration before any approval is given by the Corps rather than vice versa, as it seems the intent of the requirements of the impact statement to look at the issues before approval rather than giving approval and then looking at potential problems.

Page 1-83 (1.110)

CEH-12 [This Department has information that brines may also contain lead, cadmium and copper. Possibly other metals or materials are in the brines, if so, these constituents and their ultimate disposal should be adequately addressed.

Page 1-84 (1.116)

CEH-13 [We would recommend that the industry prove whether drilling fluids are hazardous or not. If components of fluids are unavailable or inadequately characterized, then they should not be permitted to be used. For example, there appears to be little information on biocides that may be used to maintain porosity. It would seem that the Corps would be wise not to know exactly

CEH-9

The probability of causing or triggering earthquakes by developing gas resources beneath Lake Erie is considered low. This is based on historical seismicity records and on natural gas production experience in the Canadian program which, incidentally, has not been linked to seismic activity. Due to the absence of any major identified faults in the Lake Erie Basin, the potential for significant and/or damaging seismic activity is negligible. Further discussion of seismicity in and around the Lake Erie Basin can be found in the DEIS (paragraphs 1.053 through 1.056).

The probability of an earthquake in this area being caused by natural gas removal operations is so low that it would undoubtedly be extremely difficult, as a matter of law, to support a claim for earthquake damage due to such operations. For this reason, insurance would appear to provide the best mechanism to reimburse for any earthquake losses that might occur.

CEH-10

Pennsylvania operational rules and regulations delineate the term of its permit as April 1 through October 31 (Table A.1, Item 19c). The question of equipment in transit or other variances is best interpreted by the Pennsylvania Department of Environmental Resources. Similar regulations have been proposed for New York.

Some repair of underwater equipment in Canadian waters has been performed during periods of ice cover. Ice can form as early as December, thus providing a minimum of one month for maintenance activities requiring ice-free conditions. November is a stormy period and repair activities could be hampered by surface conditions. All developmental activities require written permission of the Pennsylvania Department of Environmental Resources (Table A.1, Items 19a and 19b).

CEH-11 See Topical Response Number 8 on Glycol Chlorination.

CEH-12

The dissolved solids in the brines end up in the solid waste fraction after processing at the onshore treatment/disposal facility (see Figure 1-16). The presence of lead, cadmium, copper, or other metals or materials in the brine need not cause any major changes in the waste management scheme presented in Figure 1-16 because a RCRA hazardous waste landfill for the solid waste fraction of the brines is already assumed as part of the waste disposal scenario. If the constituents from the brine render the solid waste fraction hazardous, a secure hazardous waste landfill may be required. (Note that according to 40 CFR 261.4, these wastes are, at present, exempt from the hazardous waste designation under RCRA, but the states may promulgate regulations with more stringent definitions.) See Topical Response Number 13 on Waste Disposal.

CEH-13

With regard to the recommendation by the Erie County Health Department that the industry prove the degree of hazard of these wastes, it should be pointed out that Congressional amendments to RCRA would provide for a study of these wastes by the USEPA. (See the Environment Reporter, May 18, 1979: 78-79. House Senate Panel Amend, Reauthorize RCRA.) See Topical Response Number 13 on Waste Disposal.

CD-22 what he is as the factor and the problem is possible adverse environmental impact(s) of using them. It would seem these issues should be addressed and resolved before the Corps makes any judgments on the question of offshore drilling.

Q-14 It is not realistic to expect that waste will, as a matter of policy, be limited to 50 miles to an authorized landfill; even south of the lake.

Q. If pipes are laid on the seabed at intervals of 30 feet deep or more, how securely will they be attached to the bottom? Will they not heave, for example, in the event of a rupture or reach the place where the air anchors are pulled up?

the same manner as the other two companies. The company's assets are estimated at \$10 million. The company has been operating since 1968. It has a total of 10 employees. The company is located in the city of New York.

The last sentence in the paragraph reads, "La Penasveniente, is to duplicate that commercial, fighting still takes place." The Corps is advised to check with the Panamanian Task Committee on this statement. Commercial fishing should have been included in the Draft Environment: Impact Statement (2015). The statement in the 2015 regarding the status of commercial fishing in Panamanveniente does jeopardize the credibility, depth and accuracy of the impact statement.

Under Section 5, there is insufficient information on the impact of adverse discharge on fish and wildlife (most in the worst ecological scenario with respect to fish life - dioxin, mercury, etc., winter, spring, summer, fall). What is the worst anticipated effect on the multi-million dollar tourist industry in Erie County?

There is no doubt that the Commission is not a political body, but a technical body.

On page 6-7, what would the 3rd be at the point of release? What would it be at 0.5 m/s? How fast would it be when it hits the water? How long would it take to get to the bottom? How many fish might it kill under the worst possible conditions?

51-435

224-17

67-437

See Response QNR-16 and Response PSC-7.

The purpose of appendix C is to present the assumptions used for dispersion modeling. The assessments of worst-case accident scenarios were presented in Chapter Four. Erie County should not be affected any differently, than other shoreline counties. Some minor effects may occur with regard to recreational beaches, visual aesthetics, and an increased risk to recreational boating (paragraph 5.335), but the overall economic effect is expected to be beneficial on balance (paragraph 4.226).

Because of a stimulation range which would result in discharge of up to 15,000 galb (approximately 57,000 l) or 15% hydrochloric acid to Lake Erie. The pH at this discharge point would depend upon the discharge conditions. A maximum pH of approximately one is possible. The pH of the receiving water is approximately 7.5. Within a few meters of the release point, assuming a current speed of 15 cm/s, a very conservative for depths at which water intakes are located, the pH would be 7.5. The pH of the water at an intake would be no more than 0.5 pH unit below the value for ambient water. Ambient pH values in Lake Erie are 7.5 to 8.5. The maximum number of fish which could be killed is not possible to estimate.

Col. George P. Johnson
Lieutenant Colonel
January 6, 1963

CEM-20

Also, we wish to note that a local company disposal of liquid wastes in
open rivers, through the use of a deep well injection procedure. An erosion
control project is being conducted by the local company to prevent the
possibility of penetrating the reservoir and releasing chemicals into the
drilling or test boring activities. Run chills have occurred and are preventing
the use of pressure mud in waterfalls. It is noted that they are

This Department realizes the need for natural gas and appreciates the
concern of the local company in the disposal of liquid wastes. The
environmental problems are adequately addressed and resolved, we do not
anticipate limiting permits for drilling in Lake Erie

Very truly yours,

George P. Johnson

George P. Johnson, Director
Water Quality and Land Protection

CY/GBJ/406

CEM-20

impacts to deep host formations that will receive formation water injections are
expected to be minimal since they already contain saline and mineralized
waters of natural origin. Secondly, the host formations are relatively
relatively small and, thirdly, there is a great thickness of low permeability
intervening formations between the host formation and accessible potable water.
This is also discussed in paragraph 4.009 of the DEIS.

Potential releases of injected industrial wastes as a result of penetration by
drilling activities will be controlled through required drill casing and well
cementation. The equipment designed to control such occurrences.
These techniques and equipment are described in the section on Routine
Activities" (pages 1-53 through 1-74), including step-by-step procedures listed
in Table 1-25.

Formation waters are naturally occurring and relatively harmless; they are
considerably less toxic than the industrial wastes that have been injected into
deep formations. Thus, even if its reservoir were penetrated, the resulting
leakage would be relatively minor and of short duration. Additional discussions
of formation waters and their disposal can be found in paragraphs 1.110, 1.113,
1.126-1.131, and 4.009.



COUNTY OF ESSEX
Department of Health
175 Niagara Street
Buffalo, N. Y. 14203
Tel. 835-3100

January 8, 1962

Col. George P. Johnson
U. S. Army Medical Center
175 Niagara Street
Buffalo, N. Y. 14203

Attention: Regulatory Practices Branch

Dear Colonel Johnson:

On January 6, 1962, the Erie County Department of Health responded to the State Department of Environmental Impact Statement, E. S. Lane Erie Medical Center, Erie, Pennsylvania.

2E-12

Subsequent to our mailing and comments, we noted a typographical error on the fifth page of our comments and are requesting that you direct our response.

The first sentence on the top of the page reads in part: "Local removal disposal of liquid waste..." The sentence should be corrected to read: "Local removal disposal of liquid waste..."

Should you have any questions concerning this matter, please contact this office.

Thank you for your kind attention.

Very truly yours,

Charles F. Thomas
Charles F. Thomas, Director
Water Quality & Land Protection

CFW/BJL:am

2E-12 Correction to comment's letter noted.

SOUTHERN TIER WEST
REGIONAL PLANNING AND DEVELOPMENT BOARD

2100 MAIN STREET
MADISON, NEW YORK 12521

James E. Lister, Chairman
Don B. Perkins, Secretary
Paul B. Carpenter, Director

PHONE (518) 438-1231
442-5503
442-6600

8 January 1981

Dr. George P. Johnson, DISTRICT ENGINEER
New York State Department of Environmental Conservation
1100 Washington Street
Albany, New York 12247

Dear Mr. Johnson:

I have just completed a review of the Dry's Programmatic Environmental Impact Statement, entitled "U.S. Lake Erie Natural Gas Resource Development" and have the following comments:

170a-1 The EIS is generally a good and useful study. The reasons for which are explained in the comments. The study is well organized and the information is presented in a clear and concise manner. The study is a good example of a study that should be required of all projects involving the development of natural gas resources. The study is a good example of a study that should be required of all projects involving the development of natural gas resources.

170a-2 The second comment relates to the so-called "regional" studies. The "regional" studies are not really regional studies. They are studies of the local area. The studies are not really regional studies. They are studies of the local area. The studies are not really regional studies. They are studies of the local area.

I hope these comments are useful to your efforts and should further information be required please feel free to contact me.

Sincerely yours,

John W. Perkins

LESLIE V. MYERS, ALCP
Chief, Policy Planning

1/27/81

cc: Mr. Gregory R. Smith
Chief, Bureau of Mineral Resources
NY DEC Head
Albany, New York 12223

In an application-specific basis, the Dept. would advise the general public of the proposals by public notice. The public notice would be published in the local and proposed sections and requests the comments and views of the general public. The public notice would be published in the local and proposed sections and requests the comments and views of the general public. The public notice would be published in the local and proposed sections and requests the comments and views of the general public.

The "Public Response Number" is an "EIS" is required. The "Public Response Number" is an "EIS" is required. The "Public Response Number" is an "EIS" is required. The "Public Response Number" is an "EIS" is required. The "Public Response Number" is an "EIS" is required.

170a-1

170a-2

CHAUTAUQUE

January 9, 1987

122

XX: Draft Programme Environment
Impact Statement: U.S. Lake Erie
Basins; Gas Resource Development

Dear Carlos! Welcome!

The above referenced environmental impact statement has been reviewed by this Department on the basis of environmental and public health impact on Christchurch County.

[illegible][illegible]

D-3 Disposal of wastes in Chardston County generated in the drilling and production in progress may also pose problems. There has been significant adverse public reaction to the current proposal for deep well brine injection from a land jet well. Additionally, the availability of landfill sites in the County is very limited.

CC-4-1

CH-2

5-403

See "Optical Response Number 9 on Water Supplies and Treatment Costs and Topical Response Number 8 on Ziyod Chlorination. Actually, these supplies would have been more than 0.5 mile buffer... they did not extend far into the lake because they would be covered by the one-at-a-knot buffer.

See "Topical Response Number 6 on Sediment Resuspension, Topical Response Number 8 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs.

General requirements for the geologic strata utilized for deep well injection are discussed in paragraph 1.30. Further details may be found in the reference cited there. See Topical Response Number 13 on Waste Disposal.

Colonel George P. Johnson Page 2 Steven M. Johnson
January 9, 1981

CCH-4 This Department would be interested in reviewing further environmental
impact information on specific well locations. Thank you for the opportunity
to comment on this draft report.

Very truly yours,


Steven M. Johnson, P.E., Director
Environmental Health Services

SAU/jlr
cc: Mr. Gregory M. Sovas, Chief, Bureau of Mineral Resources

CCH-4 Should gas development in Lake Erie ultimately be determined environmentally
acceptable in principle and should applications for Corps permits be received
for drilling offshore of Chautauqua County or in areas that could affect the
county, the Buffalo District would ensure that the Health Department is provided
the opportunity to comment on specific proposals.



COUNTY OF ERIE
Office of the County Executive
Erie, Pennsylvania 16501

Re: D. Johnson
Colonel Johnson

January 9, 1981

add copy to
subject file

Colonel George P. Johnson
District Engineer
U. S. Army Engineer District
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Johnson:

CEXP-1 The County is concerned that there be a thorough assessment of the environmental impact on drilling for natural gas in Lake Erie. The citizens of the County are sensitive to the need to protect this vital, fresh-water resource. Over the past few years, there has been an extensive development of on-shore gas resources in Erie County. The County has received numerous complaints from the citizens about actual and alleged pollution of nearby streams and the groundwater serving some individuals, as well as the destruction of vegetation on private property. At the present time, neither the County Health Department or Pennsylvania Department of Environmental Resources has the necessary rules, regulations, standards, personnel or equipment to control such abuses.

It is vital that proper safeguards be developed to ensure that Lake Erie, as a fresh-water resource, be protected. I would recommend that before development of this natural gas resource is undertaken the following steps be required to ensure the public:

CEXP-2 1. Adequate rules, regulations and standards to control off-shore drilling be adopted by Pennsylvania.

CEXP-3 2. That a mechanism be established to provide that a certain percentage of royalties from the natural gas revenues be required to be set aside to be used exclusively for providing the equipment and personnel to monitor the off-shore drilling operations.

CEXP-1 The assessment of an onland alternative was for environmental comparison only. The Reference Program must be judged on its own merits and on consideration of its administrative procedures. The recommendations made in the administrative section of the DEIS (Chapter One) and in the guidelines section (Appendix D) are designed to ensure that the environment is protected and that proper monitoring and enforcement occur. (See also Topical Response Number 3 on the Task Force and Federal Regulatory Authority.) The Reference Program projects about eight rigs, that locations of activities will be known, and that fewer personnel would therefore be required to monitor an offshore program than an onland program which is highly scattered in the region. The offshore program is subject to various federal authorities which the onland program is not.

CEXP-2 Recommendations noted. This programmatic DEIS recommends the adoption of uniform environmental standards by the three states. Additionally, no federal permits will be issued where a state has denied its authorization to perform the work.

CEXP-3 The states own the mineral rights beneath the Lake, and the establishment of royalties and the use of the monies is not a federal but a state decision. Financial support for the administrative procedures on a state level would originate from operator payments to the states as stipulated in lease provisions (paragraph 1.068).

Colonel George B. Johnson 2.

January 5, 1902

As the Chief elected official in Erie County, I have witnessed
the quality of the citizens of the County. The County, in its
history, has been a source of pride and honor to its
citizens. I am sure that the quality of the
is not compromised.

Very sincerely,



Russell B. Johnson
County Executive

RBJ:es



County of Erie

Small Group Activities
Working Alone / Interview

January 12, 1961

References

Colonel George P. Johnson
Brigade District
U.S. Army Corps of Engineers
11th District
Buffalo, New York 14207

Dear College: Submit!

Thank you for submitting for our review the Draft Environmental/Economic Impact Statement concerning U.S. Lake Erie Water Use Development. Lake Erie represents an important natural resource to the residents of Erie County. In addition to serving as the major water supply source, the Lake provides invaluable opportunities for recreation, economic development and local employment.

Support for commencement of gas drilling can only be given, if proper safeguards are provided to protect the land. This is especially important to Erie County as our location puts us in the immediate vicinity of the proposed drilling area with the potential for deleterious water supply. The Draft Environmental Impact Statement on drilling does not adequately address the question of appropriate safeguards. A final Environmental Impact Statement

2000

11. The draft report to be based on a reference program approach which assumes that a certain amount of drilling activity in the future will be required during the reporting period. The report also assumes that such drilling will be regulated by MMS. Personnel at the New York office were given new data which incorporated the regulatory guidelines identified in the draft document. Since

219

See "Optical Response Number 1 on the Ask Force and Federal Regulatory Authority Water Quality Certification that is issued under Section 401 of the Clean Water Act" for an activity that may affect the waters of an adjacent state is subject to review by the USEPA and the potentially affected state.

Colonel George P. Johnson
Page 2
January 12, 1981

14.1 the entire report is based on the above assumption, serious concerns can be raised should the proposed guidelines not be enacted by each state. The validity of the entire report can be questioned due to this issue. It should be made explicit that the Federal Government will permit drilling only in those states that adopt uniform regulations. If this is not done, a situation similar to that caused by migration of acid rain may arise.

CEXN-2 2) Impacts which may occur during each individual drilling operation cannot be adequately examined using the programmatic approach. Erie County is very concerned that comprehensive environmental analysis occur prior to each specific drilling operation which examine impacts to water quality, shoreline erosion, waste disposal sites, and fish habitat areas.

CEXN-3 3) A portion of the royalty fund each state will receive from gas drilling should be earmarked for local cleanup operations in the event of any emergency occurring due to drilling operations.

CEXN-4 In addition, since the risk to a major resource of this area is so great, the question of need for Lake Erie natural gas in the regional and national fuel supply system should be documented. I don't feel that this has been adequately documented.

CEXN-5 Due to the above concerns and the critical need for public involvement in the Lake Erie gas drilling issue, Erie County officially requests that a public hearing be held in the near future relative to the draft report.

Once again, thank you for the opportunity to review and comment on the Draft Environmental Impact Statement.

Very truly yours,

Edward J. Rytkowski
EDWARD J. RYTKOWSKI
County Executive

EJR:lt
Attachment

CEXN-2 The preparation of this Programmatic DEIS does not negate a proposal-specific review of individual applications. As indicated in various sections in Chapter One and Appendix D of the DEIS, there would be numerous environmental review requirements and the need for site-specific and more detailed program-specific information. This information would be used to assess the environmental impacts of each proposal in more detail. Examples of the types of reviews that would be performed on specific proposals include: permit reviews under Section 402 of the Clean Water Act concerning discharges into the waterways; Water Quality Certifications under Section 401 of the Clean Water Act; Prevention of Significant Air Quality Deterioration permit reviews (see Chapter Four--Air Quality); reviews and testing under Resource Conservation and Recovery Act (RCRA) regulations for waste disposal; reviews under the Safe Drinking Water Act; Corps of Engineers permit reviews under Section 10 of the River and Harbor Act of 1899 and Section 404 of the Clean Water Act; Spill Prevention and Accident Contingency plan reviews; and others listed or discussed in the DEIS (see paragraphs 1.069 to 1.073, 1.076 to 1.084, and Appendix D). All of these reviews would require detailed review of specific proposals to ensure the protection of water quality and supplies, groundwater, air quality, shore erosion, aquatic habitat, recreation, endangered species, and other public interest factors.

CEXN-3 See Response CCD-4.

CEXN-4 See Topical Response Number 12 on the Need for Natural Gas.

CEXN-5 A public meeting was held in Buffalo, NY, on 11 February 1981 concerning the Draft Programmatic EIS. See public involvement section of this Final EIS.

January 12, 1981

ERIE COUNTY CONCERNS REGARDING
THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
U.S. LAKE ERIE NATURAL GAS RESOURCE DEVELOPMENT

Erie County, New York, benefits from being located adjacent to Lake Erie in a variety of ways. In addition to serving as the major water supply source for Erie County, the Lake also provides invaluable opportunities for recreation, economic development and aesthetic enjoyment. Any activity which has the potential of harming this freshwater resource is of great and utmost concern to Erie County. With this in mind, the following concerns are being submitted relative to the Draft Environmental Impact Statement prepared by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency concerning U.S. Lake Erie Natural Gas Resource Development. It is requested that these be given full consideration during the draft revision process.

CEMN-6 1. A major concern pertains to the need for a clearer indication within the draft report relative to gas drilling's potential impact to the County's drinking water supply. Lake Erie is the water supply source for most of the 1,013,300 residents within the County and must be protected from any potential adverse impacts.

CEMN-7 2. It must be stressed that Lake Erie gas drilling represents a severe environmental risk to Erie County without any guaranteed benefit. The gas produced will be placed within New York State Pipelines and distributed throughout New York State, yet any environmental impacts will be borne solely by Erie and Chautauque Counties. This is of great concern. It is therefore critical that prior to any drilling operation the issue of immediate and future need for Lake Erie gas within the regional and national fuel supply system be determined through a comprehensive study. The question remains why assume any risk, if there is not a current demonstrated need for Lake Erie gas. An argument for Lake Erie gas drilling is that it will provide a degree of energy security in the event of another gas curtailment such as occurred in 1977. The fact is that at the present time and for the foreseeable future, there is an over-abundance of natural gas available. This situation can be attributed to conservation efforts, on-going price deregulation which encourages new exploration and the development of unconventional gas sources. Furthermore, alternative sources such as land drilling, methane production from solid waste, hydrogen gas, and other resources can equal the lake production at less environmental risk.

3. Erie County has several concerns regarding the overall approach taken by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency in preparing the draft Environmental Impact Statement. These are outlined as follows:

CEMN-6 The effects of routine and accidental releases on potable water supplies are discussed in some detail in the DEIS, particularly in paragraphs 4.017-4.025 and 4.071-4.074, and in Appendix C. Impacts were adequately assessed at the programmatic level. Site-specific impacts would be addressed on a site-specific basis. Additionally, see Topical Response Number 8 on Glycol Chlorination and Topical Response Number 9 on Water Supplies and Treatment Costs.

CEMN-7 See Topical Response Number 12 on the Need for Natural Gas.

CEMN-3	<p>a. Although the reference program approach is justified due to the current lack of specific drilling or lease activity, this should not preclude the need for more specific impact statements if so warranted, during the actual federal and state permit issuing process. Erie County requests assurance that the Reference Program method will not become a blanket environmental approval when all future federal government permits are sought by drilling operators.</p>	CEMN-8	See Response CCM-7. This programmatic DEIS does not negate proposal-specific review or propose any blanket authorization for future activities.
CEMN-9	<p>b. The draft Environmental Impact Statement assumes that the proposed drilling guidelines outlined in Appendix D of the report will be enacted by Ohio, Pennsylvania and New York. This would provide a uniform and comprehensive set of standards applicable to all drilling activity. Since many of the measures suggested in the report for mitigating potential environmental impacts are dependent on enactment and subsequent enforcement of the proposed guidelines noted in Appendix D by each State, a serious concern can be raised. In the event the proposed guidelines are not enacted, it can be assumed that many of the mitigating measures noted in the Environmental Impact Statement would not be carried out to an adequate degree. Thus, the conclusions drawn in the report would no longer be applicable. Erie County has serious concerns regarding this issue and requests that all federal permits for drilling in Lake Erie be prohibited until uniform and acceptable guidelines based on those proposed in the Environmental Impact Statement are collectively enacted by the States of Ohio, Pennsylvania and New York. Sufficient time for public review of the guidelines must also be provided.</p>	CEMN-9	See Topic 2 Response Number 3 on the Task Force and Federal Regulatory Authority. This programmatic DEIS and the hearings which were held in connection with the project were the first stages in gaining public input for the program. If gas development in U.S. Lake Erie is ultimately determined environmentally acceptable in principle and if applications are received, the public would be afforded additional opportunities to comment on specific proposals.
CEMN-10	<p>4. Erie County has the following concerns regarding specific points raised in the draft Environmental Impact Statement:</p>	CEMN-10	Sensitive public and natural areas have been identified as constraints for U.S. Lake Erie natural gas resource development. Site-specific identification and prohibition of development in these areas would be addressed on a site-specific basis for natural gas development.
CEMN-11	<p>a. The draft Environmental Impact Statement and accompanying proposed drilling guidelines do not prohibit pipeline construction from occurring in sensitive public and natural areas. It is suggested that pipelines be prohibited from such areas including critical erosion hazard areas, coastal wetlands, significant fish spawning habitats, and any others deemed appropriate. These areas should be located and mapped by an appropriate State agency.</p>	CEMN-11	Additionally, there is an environmental sensitivity analysis to be performed on a site-specific basis (Corps of Engineers permit review includes considerations of erosion, fish and wildlife, wetlands, water quality, and other public interest factors (see Tables 1-13 and 1-14).

CEMN-10	<p>b. The draft Environmental Impact Statement notes that approximately 250 workers would move into the Buffalo area during peak employment in 1985. It is also noted that total direct, indirect and induced employment in the Erie County area in 1985 could reach 1236. Such figures seem high based on socio-economic impact studies prepared for other large scale construction projects. A special concern pertains to the induced employment figure estimated at 988. The report does not clearly define induced employment nor provide adequate background documentation. It is our concern that these employment figures be fully documented in order to provide a clear understanding of the potential socio-economic impact to the County.</p>	CEMN-11	The DEIS defines induced employment as new jobs generated when direct and indirect employees spend money in the region and operators purchase goods (paragraph 4.166). For example, more workers in the area would induce a need for more doctors and clerks to serve them.
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CEM-12

g. The Draft Environmental Impact Statement indicates that drilling activity will result in the creation of wastes requiring disposal in both Erie and Lawrence Counties. Erie County currently is experiencing a shortage of landfill space and is very concerned about the creation of more waste products from the drilling activity.

CEM-13

f. Assuming that there is demonstrated need and benefit for the area from Lake Erie Gas Drilling, the following considerations for coping with an emergency should be in place now prior to drilling activity. Erie County's location at the end of the lake, local governments and industries are concerned about the threat of lake pollution and contamination increasing local costs for water purification. The emergency response responsibility should not fall on local government. The emergency response should be funded by the States for leases be placed in an escrow account to be used in emergencies. Leases should be funded by or related to the Lake drilling program. This fund could be redistributed to the States when the gas is depleted.

CEM-12

The DEIS acknowledges the problem associated with availability of disposal sites and indicated that construction of new facilities would be required. The new facilities would have to comply with RCRA regulations (see paragraphs 1.120-1.131 and paragraph 1.133). See Topical Response Number 13 on Waste Disposal.

CEM-13

However, the mineral rights beneath Lake Erie belong to the states and these of funds obtained because of these rights is determined by the states not the federal government. Additionally, see Topical Response Number 7 on Contingency Plans and Cleanups and Topical Response Number 9 on Water Supplies and Treatment Costs.

PUBLIC MEETING STATEMENT

PUBLIC MEETING TOPIC:

DRAFT ENVIRONMENTAL IMPACT STATEMENT - U.S. LAKE ERIE
NATURAL GAS RESOURCE DEVELOPMENT (December, 1980) prepared
by U.S. Army Corp. of Engineers and U.S. Environmental
Protection Agency.

Public Meeting Location:

Buffalo State College
1300 Elmwood Avenue
Buffalo, New York

Statement Presented By: Edward J. Rutkowski,
Erie County Executive

Date: February 11, 1981

Time: 7:30 P.M.

On behalf of Erie County, New York, I wish to thank the U.S. Army Corps of Engineers for holding tonight's public meeting. The issue of Lake Erie gas drilling is an important one and requires that full opportunity be provided for government and private citizen involvement.

Prior to outlining our concerns with the draft Environmental Impact Statement, I feel it is appropriate to stress the importance of Lake Erie to our area.

The Lake represents a valuable natural resource to Erie County by providing a fresh water supply source for most of the County's 1,013,300 residents, as well as to the majority of industrial and commercial establishments throughout our area. The Lake also provides valuable opportunities for fishing and swimming which are immediately accessible to all residents of Erie County.

In recent years, Erie County and its local governments have recognized the need to improve and maintain the Lake's water quality so that the above mentioned benefits continue to contribute to the high quality of life enjoyed by all our residents. During the 1970's approximately \$23 mil. of public funds have been invested in constructing efficient sewage treatment plants along the Erie County shoreline. This certainly reflects the importance Erie County places on improving and maintaining the water quality of Lake Erie.

The Lake's value to this area, as well as our interest in protecting the public investment made in improving its quality

warrant our close examination of the draft Programmatic Environmental Impact Statement. A further reason for our strong interest is the location of Erie County within the Great Lakes Basin.

Since the upper Lakes eventually flow through the Niagara River, it is likely that any major spills or gas leaks occurring in the western and central parts of Lake Erie would cause serious environmental problems along the Erie County shore.

With these points in mind, I wish to outline the following concerns regarding the draft Environmental Impact Statement.

The report should provide a clearer indication regarding gas drilling's potential impact to the County's drinking water supply. The potential for accidents will be present during any gas drilling operation and it is very important to outline in comprehensive terms what the risks will be as well as their accompanying impacts.

The draft report is based on a reference program approach which assumes that a certain amount of drilling will occur in the Lake during a specified time period. The report also assumes that such drilling will be regulated by Ohio, Pennsylvania and New York through new state legislation which incorporates the regulatory guidelines identified in the draft document. Since the entire report is based on the above assumption, serious concerns can be raised should the proposed guidelines not be enacted by each state. The validity of the entire report can be questioned due to this issue. It should be made explicit that the Federal Government will permit

CEIN-14 See Response CEIN-5.

CEIN-15

The Reference Program guidelines are presented as a starting point for discussing the environmental impacts of an offshore development program. They are not intended to provide a basis for development of standards by an independent regulatory "task force." Definitive evaluation of potential impacts cannot be performed until regulations have finally been promulgated and specific proposals for offshore development have been submitted. Under the Reference Program provides a conceptual framework, permitting tentative estimates as to the potential impact of an offshore drilling program.

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drilling only in those states that adopt uniform regulations. If this is not done, a situation similar to that caused by migration of acid rain may arise.

Impacts which may occur during each individual drilling operation cannot be adequately examined using the reference program approach. Erie County is very concerned that a comprehensive environmental analysis occur prior to each specific drilling operation.

A portion of the royalty fund each state will receive from gas drilling should be earmarked for local cleanup activities in the event of any emergency occurring due to drilling operations. Responsibility for cleanup operations must not fall on local governments.

Although various sources have indicated that Canada has permitted Lake Erie gas drilling for many years without any major environmental impacts, I wish to raise an important point regarding this issue.

The number of major port facilities and population density along the U.S. shoreline of Lake Erie in comparison to the Canadian side would indicate that the volume of commercial navigation and recreation boating occurring in U.S. waters is greater than that taking place within the Canadian section of the Lake. This would serve to increase the potential for accidents between gas drilling and commercial/recreation boating activity. It is hoped that the final environmental impact statement would clearly outline the potential for such accidents as well as the appropriate measures which are necessary to prevent their occurrence.

CEMN-16 See Responses CEMN-15 and EPA-1.

CEMN-17 See Response CCM-4.

CEMN-18 Potential for accidents between gas drilling and commercial/recreational boating activity is addressed, and measures to prevent such accidents are identified (paragraph 4.065).

It must be stressed that Lake Erie gas drilling represents a potential environmental risk to Erie County without any proven benefit. The gas produced will be placed within New York State pipelines and distributed throughout New York State, yet any environmental impacts will be borne solely by Erie and Chautauque Counties. This is of great concern. It is therefore, critical that prior to any drilling operation the issue of immediate and future need for Lake Erie gas within the regional and national fuel supply system be determined through a comprehensive study. The study should also identify the specific economic benefits to Erie County. Some of the benefits which should be examined include the potential for guaranteed energy supply source to local users, potential spin off industrial investment, and

NATURAL GAS DRILLING BENEFITS FOR ERIE COUNTY USERS.

In conclusion, Erie County recognizes the potential value and importance of Lake Erie gas to the regional and local energy supply system, yet we are also very aware of the value of Lake Erie as our major fresh water supply source. It is our concern that the pursuit of natural gas occur in an environmentally sound manner without jeopardizing the Lake's function as a valuable natural resource. Therefore, if regulatory safeguards are enacted which minimize the risk to our fresh water supply system Erie County will support Lake Erie gas drilling.

Once again, thank you for the opportunity to present our

CEM-19

In the light of the "national supply system" is beyond the scope of the DEIS. The DEIS does not address the issue of natural gas within the industrial sector in the Lake Erie region. This issue was addressed (see paragraph 1.018, pages 1-47 to 1-50, and page 1-83, 1-84) when Erie gas is produced, there is no guarantee that Erie County residents will benefit directly. The price of natural gas to Erie County consumers will probably not be affected very much by Lake Erie gas production due to "colled in pricing." See also Topical Response Number 12 on the Need for Natural Gas.

CEM-20 Statement of Position noted.

-3-

concerns and we look forward to receiving the Final Environmental
Impact Statement in the very near future.

Respectfully submitted,

EDWARD J. RUTKOWSKI

ERIE & NIAGARA COUNTIES

REGIONAL PLANNING BOARD

See J. General & Co.

January 16, 1961

*James V. Ryan
Chairman
James B. McNamee
Vice Chairman
Robert J. Blumenthal
Secretary*

Colonel George P. Johnson
Colonel, U.S. Army
Building Dept. Inc. Corps of Engineers
1775 Niagara Street
Buffalo, NY 14207

Attention: Regulatory Functions Branch

RE: Draft Programmatic Environmental Impact Statement
U.S. Lake Erie National Gas Resource Development

Dear Colonel Johnson:

The Erie and Niagara Counties Regional Planning Board as the designated Area-wide Planning Organization (APO) for the Lake Erie Metropolitan Statistical Area and the designated agency for 228 Water Quality Management Program has concluded a review of the above cited project.

The development of gas resources in Lake Erie could have a direct impact on the raw drinking water supply, water quality, aesthetics, fish and wildlife, as well as the economic climate of this region.

We therefore urge the Corps to address and eliminate the concerns and concerns expressed in the attached statement as well as those expressed by the other concerned individuals in this area before a final decision is made on the proposed project.

Please accept our sincere appreciation for the opportunity to review and comment on this project.

Sincerely yours,
Robert J. Blumenthal
Robert J. Blumenthal, Jr.
Director

LJN:HCJaw
Enclosure

Approved: _____ Date: _____
Special Agent in Charge, U.S. Army Corps of Engineers, Buffalo, New York

Erie and Niagara Counties Regional Planning Board

Review of

Drake Environmental Environmental Impact Statement
U.S. Lake Erie Natural Gas Storage Development

Prepared by

Philip A. Allen, Senior Planner
Henry C. Jones, P.E., Senior Engineer
Robert A. Jones, P.E., Senior Engineer
Gregory A. Schen, Assistant Environmental Control Scientist

JANUARY 1981

Erie and Niagara Counties Regional Planning Board
1101 Sheridan Drive
Amherst, NY 14226

The Draft Programmatic Environmental Impact Statement: U.S. Lake Erie Natural Gas Resource Development prepared by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency was reviewed by ENCRPB staff in an effort to identify possible impacts upon adopted regional plans and the relationship to adopted regional goals and objectives with respect to the development of natural gas in the U.S. waters of Lake Erie.

The major concerns associated with gas development in Lake Erie is the potential environmental impacts associated with the drilling processes. Since Lake Erie is the primary source of potable water for this and other regions, impacts on water quality are of particular importance. The primary purpose of the Programmatic Environmental Impact Statement (EIS) is to determine whether natural gas development in Lake Erie is environmentally acceptable. A number of possible impacts on water quality associated with construction activities, routine operation, and accidents have been identified in the EIS.

L. Relationship of the EIS to Regional Planning Board Plans, Goals, Objectives and Programs

A. 203 Water Quality Management Program:

Section 208 of the Federal Water Pollution Control Act of 1972 provided local areas the opportunity to plan and manage a comprehensive water quality management program. State governors were given the power to designate areas within their states that have substantial water quality problems. The Governor of New York State designated Erie and Niagara Counties as a region in which a 208 program would be developed. The Erie and Niagara Counties Regional Planning Board was designated the agency to conduct the 208 program.

Natural Gas development in Lake Erie is inconsistent with the 208 program goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and provides for recreation in and on the water to be achieved by July 1, 1983, and the ultimate goal of eliminating the discharge of pollutants into navigable water by 1985.

B. Adopted Regional Water Supply Plan and Program

Lake Erie is the source of drinking water for 90% of the population of this region. The potential development of gas resources in Lake Erie introduces a new source of additional pollutants to the Lake. Additional pollutants could

ENC-1

Based on the analysis of impacts on fish and wildlife, recreation, and water quality as discussed in the DEIS and in consideration of the objectives of the Clean Water Act (CWA), we do not agree that the Reference Program is inconsistent with the goals of the CWA. The Act itself declares that a goal is the elimination of the discharge of pollutants into navigable waters [Section 101(a)(1)] and that, wherever attainable, an interim goal is to be achieved of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and for recreation in and on the water. The goals of the Act are implemented by Section 301 which states that such discharges are unlawful except in compliance with Section 301, 302, 306, 307, 318, 402, and 404 of the Act. Sections 402 and 404 in turn authorize the permitting authorities to allow certain discharges if they comply with the appropriate guidelines, limitations, and standards. Section 301 (effluent limitations), Section 302 (water-quality-related effluent limitations), Section 306 (national standards of performance), Section 307 (toxic and pretreatment effluent standards), Section 404(b)(1) (guidelines for the specification of disposal sites for dredged or fill material), and Section 318 (aquaculture) relate to these criteria for permits. The statutory scheme makes it clear that discharges shall not take place until they have been found acceptable. The CWA permit regulations, standards, and guidelines are applicable to gas development activities in Lake Erie and compliance with these constitutes compliance with the goals of the Act. The Reference Program is limited to the smallest possible releases and is judged under the CWA in the DEIS. Under Section 208 of the Act, appropriate areawide mechanisms related to Sections 402 and 404 are provided. Additionally, the New York Department of Conservation administers the Section 402 NPDES permit program and is responsible for issuance and reissuance of permits under the program.

ENC-2

See Topical Response Number 8 on Glycol Chlorination and Topical Response Number 9 on Water Supplies and Treatment Costs.

ENC-2 affect the quality of the raw drinking water supply. Elevated concentrations of hydrocarbons in public water supplies may present a health hazard. The release of the 0.03 percent hexane-plus fraction to the water column from natural gas losses to Lake Erie thus represents a concern since some of these compounds are highly soluble, possible carcinogenic, and impart a taste and odor to water. These compounds could elevate concentrations above normal background levels presently in the Lake and thus have an impact upon potable waters. Catabolism of these hydrocarbons would compound the issue because of the production of as yet unknown halogenated products. (Argonne 1978)

ENC-3 There is no treatment available at the water purification facilities for control of total dissolved solids. Any increase in total dissolved solids caused by drilling activities would thus be passed through the facilities untreated (personal communications (1978) with Walchuch, Jaworski, Jefferies, Pizzi, Jacquet, and O'Connor). (From Argonne 1978)

ENC-4 Resuspension of sediments and increased turbidity enables the environment to support increased populations of microorganisms altering dissolved oxygen, pH, and other water characteristics. Increased turbidity and restoration of microorganisms to the water column may affect a rise in bacterial counts in the water. (Water Quality Criteria EPA 1973) Degradation of the raw water supply from gas development may increase the level and cost of water treatment and increase health risks. Additional data on drilling discharge characteristics is necessary to more adequately assess water treatment capabilities. There is a need for the development of standardized procedures by drilling operators to be used at water treatment facilities in the event a mishap releasing unacceptable levels of contaminants to offshore drilling activities occurs. (Argonne 1978)

C. Adopted Regional Sanitary Sewerage Plan and Program and Adopted Regional Storm Drainage Plan and Program

Gas development in Lake Erie does not directly impact on these plans and programs. However, the ENCRPB adopted Sanitary Sewerage Plan and Program was developed to reduce the discharge of pollutants to regional surface waters thereby improving the quality of the Lake and regional waters. The ENCRPB adopted Regional Storm Drainage Plan and Program to a lesser extent also improves the quality of surface waters through control of drainage and runoff.

ENC-5 A large amount of capital investment and effort have been committed to improving the quality of the Lake and regional waters. The potential development of natural gas in Lake Erie with the additional pollutants and the potential adverse effects on water quality, is counter productive to these plans and programs.

D. Land Use

ENC-6 1. Gas development in Lake Erie would introduce new industrial land uses into the coastal zone. Due to the hypothetical nature of the gas development, it

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ENC-6

An acceptable level of TDS is on the order of 500 mg/L, which should be met without treatment at Lake Erie water purification facilities. Additionally, see Topical Response Number 9 on Water Supplies and Treatment Costs.

See the following Topical Responses: Number 6 on Sediment Resuspension; Number 7 on Contingency Plans and Cleanups; and Number 9 on Water Supply and Treatment Costs. Also, the disclosure requirements for the program and site-specific analyses will provide further refinement of impacts.

See Response ENC-1. Although the Clean Water Act calls for areawide waste management and publically owned sewage treatment in the effort to meet the goals of the Act, this should not be interpreted to mean that other programs which meet the mandate of the CWA through other provisions such as Section 404 and 402 permits are counterproductive. Congress clearly intended to allow certain acceptable discharges by the inclusion of these provisions in the Act.

Although the processing facilities would be new uses, the pipelines are not necessarily new because the area is served by existing pipelines. The coastal zone also currently includes industrial facilities of much greater magnitude than the processing and compressor facilities such as power facilities and industrial facilities. The coastal zone management (CZM) proposal by the state does not rule out siting these facilities in the coastal zone but advises of detailed analyses to be performed under Article VII of the New York Public Service Law, which includes coastal zone land-use considerations. The DEIS advises site-specific studies when appropriate. See Response EPA-1.

ENC-5 program, it is not clear which specific existing land areas will be affected, however, since the vast majority of the coastal zone is used for recreation, residential or public uses, it is assumed that the introduction of the new industrial land will conflict with many existing land uses.

ENC-6 2. The industrial facilities that will be developed through the gas development program will likely cause deleterious long term intrusion into the coastal zone. Current land use patterns will be disrupted, and current land use development trends which tend towards non-industrial, environmentally sound projects will likely be cut back.

ENC-7 3. The introduction of drilling rigs into the visual plane of land users along the shoreline is likely to diminish the aesthetic appeal of their property and consequently the present value of land.

ENC-8 4. The introduction of new industrial facilities is likely to diminish the value of land and structures in the vicinity of the proposed facilities.

ENC-9 5. The potential introduction of hazardous wastes, and treatment facilities along the shoreline near pipelines will likely have severe effects on the market value of existing properties along the shoreline.

ENC-10 6. Through the gas development program, potential introduction of hazardous wastes, and aesthetic intrusions into the visual plane of the shoreline will likely have negative impacts on tourism, recreational industries, and sport fishing.

ENC-11 7. Accidents, which are inevitable under even the highly environmentally conscious program, will have negative short term effects on recreational, commercial, residential and public land uses as well as potential long term effects on the viability of recreational and commercial (tourist related) industries.

ENC-12 E. New York State Coastal Zone Management Program

The Statewide Coastal Zone Management Program, although not yet officially adopted, is a useful reference document for planning concerns in coastal areas.

The draft New York State Coastal Management Program identified eleven general issues of concern throughout the state's coastal areas. Of direct relationship to the proposed U.S. Lake Erie Natural Gas Resource Development are the following issues:

1. Aesthetics
2. Air Quality
3. Economic Development
4. Energy Development
5. Fish and Wildlife
6. Public access, and

ENC-7 The Reference Program was analyzed in terms of its potential land-use, esthetic, air quality, water quality, recreation, and water-use impacts. Although some land-use conflicts may occur, there is no indication that the Reference Program would significantly disrupt current land-use patterns or result in any cutbacks in nonindustrial projects. Given the facility setbacks and the small coastal area affected by landfalls, the impacts are expected to be minor. Development will be consistent with local zoning and CZM plans.

ENC-8 As indicated in paragraphs 4.143 and 4.146, the drilling rigs are nonpermanent drilling platforms and cannot be located closer than one mile from the shore. The impact on residential land users is expected to be negligible.

ENC-9 Although residential areas along the Lake could be affected by the siting of production facilities and possibly waste disposal facilities due to a lowering of neighborhood amenity levels (the attractiveness and value of real estate), the degree to which this could occur is currently uncertain and will depend in part on the areas ultimately selected as possible sites. Properly designed and screened facilities located in areas of low population should have very little effect and, if located in commercial or industrially zoned areas, the effect on property values could be beneficial. Production facilities should be located away from densely populated areas (Table 1-34; paragraph D.034); if it is necessary for operators to construct their own waste facilities, these facilities would be ideally located as close as possible to their other facilities which would be near major ports. The location of these facilities on a proposal-specific basis would be subject to careful siting suitability analysis in accordance with federal, state, and local land-use and environmental laws (Table 1-34). The siting suitability analysis should further ensure that residential property values are considered. See Response EPA-1.

ENC-10 The esthetic impacts of the Reference Program are discussed in paragraphs 4.137-4.152. Impacts on sport fishing and recreation are contained in paragraphs 4.061 and 4.059, respectively. The conclusions reached in the analyses are that the esthetic impacts on the shoreline would be slight, that no detectable impacts to Lake Erie fish populations are expected, and that recreation impacts would be slight. The analysis resulted in no evidence that would lead to a conclusion of negative impacts on tourism.

ENC-11 Impacts to water quality and aquatic organisms during accidents would be local and insignificant on a lakewide basis and in many instances the effects would be temporary (paragraphs 4.023, 4.025, and 4.057). Based on these conclusions, there is no evidence that accidents would have long-term effects on the viability of recreational and commercial industries that are tourist-related.

2. Recreation, and
3. Water Resources.

In particular, the issue of energy development, as described in the draft Statewide Coastal Management Report (March, 1979) identified several concerns which must be addressed before any activity begins:

ENC-12

One issue surrounding the development of natural gas in Lake Erie is the potential damage to the lake's biota and water quality. Drilling operations and the placement of gas pipelines underwater would result in increased, but localized turbidity due to disposal of drilling muds and disturbance of bottom materials. These operations would have temporary adverse effects on benthic organisms. Mobile organisms such as fish would be able to avoid the area and thus any harmful effects. Damaging impacts would result if construction operations stirred up toxic wastes which were previously dumped in the Lake. Overall, it appears that drilling activities may have only minor and temporary effects.

A second issue centers upon the possibility of accidental oil and gas spills. It is generally accepted by geologists that the changes of finding oil under the Lake are very small. If any oil is found, state regulations and law require that the well be permanently capped. As for natural gas, the extremely high pressures associated with well blowouts are not expected to be encountered in Lake Erie. If a leak does occur, the gas would simply bubble to the surface and disperse. A large leakage of gas could ignite and burn until stopped, but such an occurrence would cause minimal environmental damage.

ENC-13

Proposed state regulations would prohibit development within half a mile of the shoreline and half a mile of any public water supply intakes. This distance seems adequate to protect beach areas and water supplies from turbidity problems. If these and other environmental and public safety concerns are satisfactorily addressed, there is a moderate to high probability that natural gas production in Lake Erie will be underway within the next five to fifteen years.

ENC-14

Additional concerns not mentioned in the draft report relate to natural gas pipeline land-fall areas and on-shore processing facilities. It is important that these facilities be located in environmentally acceptable areas and so as not to preclude development of on-shore areas for other uses.

With regard to the other coastal management issues mentioned above:

ENC-15

1. Aesthetics: Aesthetic considerations should be incorporated in public and private planning and development related to gas drilling and collection operations.
2. Air Quality: State and national air quality standards must be maintained.

ENC-12 This is a restatement of discussions contained in the DEIS. No response required.

ENC-13 Areas prohibited under proposed state regulations are noted. The Reference Program prohibits drilling within one-mile of the shoreline and 0.5 mile of water intakes.

ENC-14 The concerns not mentioned in the draft CZM plan have been considered in the DEIS. The Reference Program guidelines include consideration of landfill and processing plant siting constraints and the need for site-specific suitability analyses. See Response EPA-1.

ENC-15 The CZM goals are noted. They are in agreement with the conclusions reached in the DEIS. The Reference Program guidelines, buffer zones, and recommendations for site-specific analyses include consideration of the items listed in the comment. See Response EPA-1.

Goal and Objective 5: To restore and maintain the chemical, physical, and biological integrity of the regional waters.

ENC-20

Sediment resuspension is associated with several phases of the gas development program. The composition and concentrations of suspended particles in surface waters are important because of their effects on light penetration, temperature, solubility products, and aquatic life. (EPA Water Criteria). Resuspension of sediment containing contaminants may have the most far reaching effect, since resuspension may reintroduce potentially toxic substances to the water column and enhance their availability to the biota. Based on the size of rigs currently in service in Canadian waters of Lake Erie, the bottom disturbed by a jack-up rig would be approximately 7000 sq. ft. Additional resuspension will occur during other routine operations and pipe line installation though not to the same extent. Impacts from sediment resuspension during siting and drilling should be further considered. (Argonne 1978)

ENC-21

Releases of materials during routine operations, well stimulation and accidents can have an adverse impact on water quality. Drill cuttings and bentonite clays from open cycle surface hole drilling have low solubility and are basically chemically inert, but the introduction of these suspended solids form a turbidity plume, which has potential mechanical and physical biological impacts. Closed cycle drilling discharges are small and include drill cuttings and associated drilling muds and mud additives, oils, lubricants, and drilling fluids. The discharges are minimal but at present there is insufficient data to assess the environmental impact of the discharge of cuttings and contaminants from closed-cycle drilling. (Argonne) Methane and liquid hydrocarbon releases from routine drilling operations are insignificant but do create an additional oxygen demand. Discharge of well fracturing material from well stimulation present a water quality problem. Bioassays conducted indicate some of these materials to be acutely toxic and indicate the potential for toxic conditions to occur. (Argonne) Descriptions of accidents were included in the Argonne study and in the Draft EIS using worst case modeling. The possible accidents are many and the severity variable allowing for wide ranging environmental impact making assessment difficult. A greater detailed knowledge of the chemical composition of released materials and physical characteristics of the Lake and atmosphere is needed before the environmental consequences of potential accidents can be evaluated (Argonne 1978). The associated impacts all have a negative effect on the chemical, physical, and biological integrity of the Lake and represent a degradation rather than a restoration and maintenance of regional waters. Natural gas development is clearly inconsistent with goal 5.

ENC-22

Utilities Goal and Objective 7: To assure adequate control of pollutants entering regional waters.

Development of gas in Lake Erie will permit additional discharge of

ENC-20

See Topical Response Number 5 on Sediment Resuspension. Based on Reference Program specifications, the bottom habitat disturbed by the jack-up rig pads is 1600 ft² (paragraph 4.033). To the extent possible on a programmatic level, the impacts from pipeline trenching and rig placement on water quality and aquatic biota are discussed in Chapter Four of the DEIS. Testing of sediments at specific sites can only be accomplished when proposals have been submitted by operators.

ENC-21

Since the publication of the report by McGregor et al. (1978), additional studies and analyses have been performed including measurements of lake-wide hydrocarbons (Zapotosky and White 1980) and studies onboard an operating Canadian rig (Ferrante et al. 1980). These studies included measurements of various discharges and ambient lake conditions. Additionally, the projected impacts from specific discharges of the Reference Program have been modeled since the publication of the report by McGregor et al. (1978). The DEIS includes all additional analyses and information since the latter report and is the document that addresses impacts of the Reference Program. The conclusions reached in the DEIS do not indicate that the Reference Program will degrade the chemical, physical, and biological integrity of the Lake, but rather that impacts will be minor and localized. See also Response REF-2.

ENC-22

The only discharges anticipated with the Reference Program are caused by drilling of the primary surface hole by a floating rig and the release of that portion of the stimulation returns that cannot be safely collected without the threat of explosion (paragraph 1.097). All materials that can be feasibly collected and brought to shore are so designated in the Reference Program. There are technical constraints in using closed-cycle during floating rig primary surface hole drilling. All discharges that are permitted would be in accordance with regulations promulgated under the Clean Water Act (e.g., Section 404 and 402 permits).

pollutants to the lake. Allowance of additional pollutants when not necessary or justified is inconsistent with adequately controlling pollutants entering Lake Erie and downstream waters.

ENC-22

III. Economic Analysis

Based on the ENCRPB staff review of the Argonne National Laboratory study's projected potential Lake Erie natural gas resource and the economic overview and economic issues sections, there appears to be no significant economic justification to warrant the proposed development. The potential for adverse environmental impacts outweigh the economic considerations.

ENC-23

Basis for Conclusion: Total estimated production over 22 years is approximately 531-888 BCF, which at 1978 consumption rates would supply 5 - 9 yrs. of natural gas to the region adjacent to Lake Erie. These estimated resources represent between .4 and .2 percent of total U.S. proven resources for 1976 and 1% of the reserves for the 13 state region surrounding or near the Great Lakes. On this scale, Lake Erie's natural gas would not be a significant new source of energy with the principal incentive being the potential for increased supplies to local industry in the basin to compensate for potential future curtailments. (Argonne 1978) However, there have been no curtailments of natural gas to industry in Erie and Niagara Counties, New York in the years 1978, 1979, or 1980 and none are projected for 1981 (data supplied by National Fuel Gas). Also the employment trend for this region indicates manufacturing employment has been decreasing as a percent of total employment and will continue to decrease in 1981. (Annual Planning Information: Buffalo Area 1981)

If natural gas was continued to be regulated and if Lake Erie gas was also regulated, preliminary assessment would indicate that Lake Erie gas would not be economical to produce for use in interstate commerce. Approximately 1.0 TCF of natural gas would be produced in 1985 as a result of deregulation of price proposed by Congress. It is doubtful that any portion of this additional 1.0 TCF of natural gas from deregulation will come from Lake Erie since it is probable that cheaper gas will be found elsewhere. (Argonne 1978)

1. The economic analysis presented in the EIS leaves out a number of factors which are important considerations to the viability of the communities in the region. These include the following costs:

- a) costs to taxpayers for the provision of public services to the drilling operations,
- b) decreased property values
- c) decreased income from recreation and tourism
- d) decreased attractiveness of the region as a place for permanent residences

• Billion Cubic Feet
• Trillion Cubic Feet

ENC-24

See Topical Response Number 12 on the Need for Natural Gas. Also, with regard to manufacturing and the importance of this sector of the economy to the region, see paragraphs 1.009, 1.018, and 3.125-3.137 of the DEIS.

ENC-23

ENC-24

The economic analysis is adequate to determine the economic viability of the conservative Reference Program. The Reference Program is being used to determine if gas development can be accomplished in an environmentally acceptable manner in principle. Additionally, based on evaluation of employment requirements and consequential changes to the region's existing social infrastructure (paragraphs 4.169-4.174), it is concluded that Reference Program activities should have no significant adverse impacts on urban quality, minorities, community development, community cohesion, and traffic patterns and transportation facilities (paragraph 4.175). The environmental analysis does not demonstrate any significant effects on property values, tourism, or neighborhood amenities. The analysis also does not demonstrate impacts on sport and commercial fisheries that result in loss of revenues.

References

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- National Research Council for the Environmental Protection Agency. Water Quality Criteria. 1972. Washington, D.C. 146 pp.
- New York State Department of Labor. Annual Planning Information for Buffalo Labor Area. 1981. Albany, New York. 81 pp.
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THE CITY OF HURON, OHIO
HURON MUNICIPAL BUILDING

P.O. BOX 327
417 MAIN STREET
HURON, OHIO 44839

January 8, 1981

CITY MANAGER
CITY CLERK
POLICE DIVISION
FIRE DIVISION
STREET DEPARTMENT
PUBLIC WORKS DEPARTMENT
HURON, OHIO 44839

Office of the Mayor

Col. George P. Johnson
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Re: Environmental Impact
Statement - U.S. Lake
Erie Natural Gas

Dear Col. Johnson:

In reviewing the Draft Programmatic Environmental Impact Statement entitled, "U.S. Lake Erie Natural Gas Resource Development" and being located on that portion of Lake Erie considered for natural gas drilling, there are certain facts and questions which warrant a concern for the City of Huron and its citizens.

Because of our location on Lake Erie, the City of Huron has a large influx of summer tourists, a big boating and marina industry and is a haven for fishermen. These activities have a great economic impact on all the businesses of Huron and the governmental services. The City of Huron also receives its water supply from Lake Erie.

According to the draft E.I.S. the amount of hydrocarbon gases released in the waters of Lake Erie during the drilling for natural gas is unknown. Also the impact these gases may have on the potable water supply, the recreational aspect, and commercial and sport fishing in the lake is unknown. The chance of hitting oil and the handling of this in time to avoid a problem is also unknown. These unknown factors then naturally have to be a concern for the City of Huron.

According to the draft E.I.S., Lake Erie gas would supply no more than 0.20% of the United States demand for natural gas in any one year. Lake Erie gas will not be significant enough to affect any price of gas to customers. There also is no guarantee that the 10 county area surrounding Lake Erie would get the gas from Lake Erie in case of a gas shortage. At present there is no basis for saying Lake Erie gas will be a greater economic benefit if exploited now or if left in the ground and exploited later in case of a dire necessity.

The draft E.I.S. also states the royalty return to the State of Ohio will not be large. Also the annual employment of workers may only be 1500 to 3000 people which is not a great number and this will be seasonal.

MCH-1

Although release rates for petroliferous lightweight hydrocarbon gases in Lake Erie are unknown, locations and approximate concentrations have been determined in a report by Zapotosky and White (1980).

The report of Zapotosky and White (1980) indicates the loss of petroliferous gases into lake waters over gas fields in Canadian waters and over several areas in U.S. waters. Releases into U.S. waters are probably from natural seeps originating in Upper Devonian shales.

The toxicity of the major constituents of natural gas (i.e., lightweight hydrocarbons) are relatively low. Concentrations over sites of natural gas release are approximately 5-10 times lower than recommended Freshwater Aquatic Life Criteria (Cleveland and Kingsbury 1977). However, hydrogen sulfide, formation water, and liquid hydrocarbons could also be introduced from releases. The potential impacts of these inputs on water quality are addressed in Tables 4-4 and 4-5.

Hydrogen sulfide concentrations at the release point and 0.5 mile from the release point could exceed the Freshwater Aquatic Life Criteria and the Drinking Water Standards. Hydrogen sulfide is a constituent of natural gases derived from Lockport reefs (Table 1-3; Figure 1-9). There was some indication of lower phytoplanktonic metabolism over natural gas released from the Tilbury field (Zapotosky and White 1980). Hydrogen sulfide can be oxidized to sulfate during the water treatment process.

Wells with the potential for producing greater than 5 gal/day of liquid hydrocarbons upon initial formation test would be plugged and abandoned (Table 1-10). Although the conditions for an oil blowout (e.g., geopressurized reservoirs, high liquid carbon pore space saturation, high porosity and permeability) are not thought to exist in the Reference Program Study Region, a Special Accident Category was designed to hypothesize the effects of encountering an uncontrolled oil reservoir while drilling into Ordovician or Cambrian rocks (Table 1-35).

The size of a gas resource is not the basis for determining its price to the end user. The maximum wellhead price of natural gas produced in Lake Erie will be regulated by the Natural Gas Policy Act until 1985. After 1985, market conditions (supply and demand) will largely dictate natural gas prices. If the gas produced from Lake Erie is used in the region, it may be cheaper than more distant sources of supply due to lower transmission costs.

The final destination of Lake Erie produced gas cannot be determined at this time. The gas could be used within, or out of, the Lake Erie region. Due to the economics of natural gas transmission, however, it is likely that gas produced in Lake Erie will be utilized in the region.

Restatement of information contained in the DEIS.

MCH-2

MCH-3

Col. Goerye P. Johnson

- 2 -

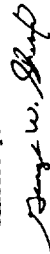
January 8, 1981

MCH-3 The success ratio of natural gas drilling in Lake Erie is estimated to be 65%. The assumed life of a well is calculated to be 15 years and it is estimated after 22 years 2,309 producing wells will be in operation in the 1,267,000 acres of the Central Basin portion of Lake Erie which the City of Huron is a part.

In view of the above information and unknowns, the City of Huron is concerned about any drilling for natural gas in Lake Erie. At the present time, this is not an objection nor an approval but a statement of concern which at a later time may become an objection to any natural gas drilling in Lake Erie.

MCH-4 The City of Huron would also request to be put on any information list and notified of any future development in regard to Lake Erie natural gas drilling. If public hearings are held, a request is made that one be held in the City of Huron, Ohio.

Sincerely,


George W. Sheard
Mayor

MCH-4

On an application-specific basis, the Corps would advise the city of Huron and the general public of any proposals to drill in offshore Lake Erie, especially areas in Ohio waters. The notification would be by public notice. Additionally, permit processing procedures allow for public hearings on proposals. In regard to this programmatic study, the city of Huron will be advised of the decision that is ultimately made concerning environmental acceptability of U.S. Lake Erie natural gas resource development in principle. See Response EPA-1.

paw

CITY OF BUFFALO
OFFICE OF THE MAYOR

JAMES D. GILPIN
Mayor

January 9, 1981

District Engineer
U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Gentlemen:

MCB-1 While serving as a New York State Senator, I consistently opposed efforts to establish natural gas drilling operations in Lake Erie and my additional experience gained during three years as Mayor of the City of Buffalo, New York, have reinforced my objections to these proposed efforts.

It is my serious concern that the proposed drilling will negatively impact upon the substantial achievements attained during recent years in revitalizing Buffalo's commercial and industrial climate; in the restoration of the city's residential neighborhoods; and in the visible improvement in the quality of Lake Erie water. To unnecessarily endanger this civic advancement seems to me to be folly.

MCB-2 The EIS admits that lake drilling poses the hazards of explosions and gas leaks, which could result in the emergency evacuation of substantial areas. The report also states that pipeline breaks, well blowouts, and marine accidents could create cancer-causing agents in filtrated drinking water. These potential hazards are simply intolerable when as many as one million Western New York residents are threatened by the possible drilling mishaps.

MCB-3 While the EPA report foresees little restriction on recreational boating in Lake Erie, it does acknowledge that drilling platforms and well pipelines could increase navigational hazards at an area just west of Buffalo, at the entrance to one of the Great Lakes major harbors.

MCB-4 Positioning gas drilling platforms or pipelines at this location would jeopardize Buffalo's position as a grain milling center and steel production facility, as well as doom our efforts to modernize local rail facilities into a trans-modal shipping center.

MCB-1

Position on U.S. Lake Erie Gas resource development is noted. See Response MCB-4 concerning effects on revitalization. Also refer to Topical Response Number 6 on Sediment Resuspension, Topical Response Number 8 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs.

MCB-2

It was noted in the DEIS that the potential for explosions exists if a pipeline ruptured or a gas leak occurred at a gas processing station. The analyses that were performed were worst-case accident situations and, in assessing hazards, it is necessary to consider the assumptions that were made. The explosion potential at a gas treatment plant was designated in the DEIS as a "lowest frequency event." The worst-case analyses assumed that all safety features would fail and also assumed that certain events would occur in a set sequence. The gas processing plant accident assumed that a small nonroutine gas leak occurred followed by accumulation of gas in the building and then a spark. This was assumed to create a small explosion, but that explosion was assumed to happen in a strategic location causing a valve or high-pressure line to rupture, leading to an even greater explosion. As indicated in the above discussion, many different events would have to occur in a certain sequence to result in the worst-case accident. The worst-case analyses also assume that there is no circumstance that prevents the accident. For example, proper ventilation of the building could prevent the buildup of gas from a nonroutine leak. Proper grounding of equipment and ensuring that there are no other sources of ignition would prevent the worst-case accident. Safety maintenance and inspections would reduce the chance of a leak, and leaks could be detected using gas detectors strategically located in the building. Likewise, the break of an underwater pipeline assumed that ice or an anchor ruptured the line, all pressure-activated cutoff valves failed, the atmospheric conditions allowed for buildup of an explosive gas cloud, and an ignition source was nearby. Proper pipeline burial procedures, maintenance and inspection of safety valves, periodic testing of valves, and alarm systems would all tend to minimize the potential for serious accidents. Finally, any hazards associated with these types of facilities are not unique to the Reference Program. There are numerous networks of gas pipelines buried throughout the region and existing compressors are part of this regional network for gas distribution.

Refer to Topical Response Number 8 on Glycol Chlorination.

MCB-3

In the DEIS, it was stated that the Port of Buffalo would probably be chosen by operators as a work port and that the port would be able to absorb the peak vessel traffic associated with gas development (paragraphs 4.058, 4.059, and 4.062-4.065). Also, there would be temporary obstructions to navigation from the rigs and some hazards to recreational boats. The analysis does not indicate any significant effects on commercial navigation or recreational boating.

MCB-4

The U.S. Coast Guard and the U.S. Army Corps of Engineers have a responsibility to maintain and protect shipping lanes and the movement of vessels into and out of harbors. In addition, it should be emphasized that the drilling rigs will be temporary structures, wells are prohibited from the nearshore zone, pipelines will be buried, and, while drilling is being conducted, rigs will be equipped with visual and audible warning devices. These impacts are considered in paragraphs 4.062-4.069. The DEIS also noted that beneficial economic impacts would accrue to a number of Lake Erie ports if the natural gas resource were developed.

Page 2

5-234

An Onland Alternative Program is discussed in Chapter Two. It should be emphasized, however, that if the United States is to achieve energy independence, less energy will have to be imported (thereby realizing substantial savings and strengthening our economy) and more domestic sources will have to be developed. This includes all sources of energy including onshore and offshore natural gas development.

if the local shortage of energy resources was acute. Drilling in Lake Erie might be warranted. But the EIS ignores the fact that surveys indicate that there is an alternative pool of untapped natural gas under land in the New York counties adjacent to Lake Erie. Not only would lac. drilling for untapped natural gas be environmentally sound, but I have no doubts that the drilling process would be less expensive than drilling in offshore Lake Erie waters.

In summary, I believe that the EIS provides sufficient justification for abstaining from any drilling in Lake Erie at the present time. The additional jeopardy presented to Buffalo businesses and residents allows me no alternative but to strongly oppose the proposed lake drilling for natural gas in proximity to either the City of Buffalo or the shipping lanes approaching the City.

Sincerely,

James D. Griffin

mg/cg

ERIE AREA CHAMBER OF COMMERCE



January 9, 1962

Executive Engineer
U.S. Army Engineer District, Buffalo
1150 Niagara Street
Buffalo, NY 14203

Attention: Regulatory Functions Branch

EC-1 After review of the map submitted relative to safety improvements
[] to the Erie Canal, the Erie Area Chamber of Commerce has
position on affairs relating to Lake Erie as it pertains to the Erie Area.

EC-2 This position is conditioned on the problem that before any project
[] for offshore drilling can proceed there be suitable acceptable infrastructure
to support the project life in the lake, the source of water supply to
Erie County, and the main tourist industry, which has a major impact on
the economic well-being of the Erie Area.

We thank you for the opportunity to participate in this process of
decision-making and to express our sincere interest and constructive comments at the
public hearing at the time of presentation of map.

Sincerely,
E. C. Hines
Ed Hines
Chairman, Commercial Tank Fleet
Committee

Frank Wilson
Frank Wilson
Chairman, Commercial Affairs
Committee

cc: Mr. Paul Borella
Mr. Harold Bar

Great Lakes National Program Office
U.S. Environmental Protection Agency
Washington, D.C.
325 South Clark Street
Chicago, Illinois 60605

CCOB Buffalo Branch Box 60000-1000 Buffalo NY 14203

EC-1 Statement of position noted.
EC-2 Comment noted.

1. The first part of the book is a general introduction to the study of the history of the world, from the beginning of time to the present day. It covers the major events and figures of world history, and discusses the different ways in which historians have interpreted the past.

1. The following information was obtained from the records of the Department of the Interior, Bureau of Land Management, regarding the land owned by the United States in the State of Nevada:

This document is not
 subject to automatic
 declassification
 because it contains
 information that is
 exempt from automatic
 declassification under
 E.O. 13526, paragraph 1(a)

12 January 1991

Colonel George P. Johnson
Electric Engineer
U.S. Army Corps of Engineers
17th Engineers Bn
Buffalo, N. Y. 14207

Below are: Supplying Product Details

Ab: Kraft Programmatische Entwicklungs Report Statement
U. J. Lado Kilo Natural Gas Resources Development

How Cultural Learning:

At a meeting of the Forest District Civic Association, Inc., held December 9, 1960 in 927 Grant Street, Buffalo, N.Y., the president of the Association, Mr. William J. Beerta, was authorized to appoint a special committee to review and comment on the Draft Environmental Statement for U.S. Lake Erie Coastal Gap Development.

including the draft labor statement was issued just before the holidays and the federal government was in a state of confusion. The committee requested that a delay be granted so that interested parties could have more time to file comments. The committee also requested that public hearings be held.

It is our understanding that a delay for filing comments will not be granted but that public hearings may be held.

• Hope that these hearings will provide a format drastically different from hearings held to the past by members of the New York State Legislature which gave priority to the presence of one citizen.

1-400

In setting the review period for the DEIS, the Buffalo District Corps of Engineers and the USEPA Great Lakes National Program Office allowed more than the 45-day review period mandated by regulations to afford more time for review and account for holiday periods. The notice of EIS filing as published in the Federal Register advised of this voluntary extended review period. A public meeting was held in Buffalo, New York, on 11 February 1984. See the public involvement section of this final EIS.

Forest District Civic Association

INCORPORATED

Corps of Engineers
E.I.S. Draft Impact Statement Comments
Gas Drilling Lake Erie
Page 2 of 3

Contamination of Water Supply

Our committee has reviewed the E.I.S. and it appears that both the Corps of Engineers and the U.S. Environmental Agency have expressed many well-founded concerns, implicit and explicit, regarding the possible contamination of Lake Erie from drilling operations.

Lake Erie is the most precious asset that the City of Buffalo possesses. We do not feel that the possibility of the lake should be jeopardized for the benefit of corporations solely interested in financial gains.

When the drinking water supply for over five million persons is at stake we feel that words such as "may not, should not, is a potential threat and appears to be minimal," should be viewed with some skepticism.

Need For Natural Gas

The need for natural gas, as outlined in paragraphs 5.004 and 5.005, is questionable because with the lifting of controls on the price of gas flowing through interstate pipe lines, the supply of gas in the United States has been dramatically increased.

Means To Alleviate Contamination

In paragraph 3.068 mention has been made to the effect that Buffalo has a "secondary intake" located in an "alternative water supply."

The city has two water intakes, one located in the Emerald Channel at the mouth of the Niagara River; the other intake is in the Niagara River. Both intakes are supplied by water from Lake Erie.

The intake in the river can be used to supply water to the Massachusetts Pumping Station. This plant has facilities to chlorinate water but no facilities for filtration. By no means can the river intake be called an "alternative supply."

Paragraph 3.065 states that if an acid spill were to occur at an intake that the PH adjustment might be made with lime or caustic soda.

Refer to Topical Response Number 3 on Glycol Chlorination and Topical Response Number 9 on Water Supplies and Treatment Costs. Benefits would not be solely in terms of financial gain to corporations. The benefits to the three states and to the public in terms of jobs from the drilling itself as well as the regional economic benefits accrued from a more secure gas supply are discussed in the DEIS (see paragraphs 4.157-4.175 and 4.180-4.187).

Terms such as the ones cited in this comment and others such as "expected, anticipated to be, predicted, etc." express the predictive nature of environmental impact analyses. The reviewer should keep in mind the fact that this study is programmatic in nature and that currently we do not have specific information on an actual proposal and actual sites. The DEIS stresses the fact that site-specific and proposal-specific information would be necessary for further refinement of impact predictions.

Although the short-term supply of natural gas appears favorable, most gas industry analysts agree that the long-term prospects of adequate natural gas supplies are uncertain. See Topical Response Number 12 on the Need for Natural Gas.

It is stated in paragraph 3.068 that the city of Buffalo has an emergency, secondary intake located in an alternative water supply. The secondary intake is considered to be in an alternative water supply in the DEIS due to the spatial separation of the primary and secondary intakes. The primary intake identified in Table 3-3 is considered to be the functional intake for the city of Buffalo and a constraint in the Reference Program (Table 1-7). Reference Program activity impacts that would require the use of alternative water supplies, including accident impacts, are not identified.

..... die ... und ... (Name)

The addition of these controls to the motor supply to avoid contamination will pose an additional financial burden on motor consumers. These materials must be purchased and stockpiled in advance of an emergency. Furthermore, it will be necessary to purchase and maintain additional equipment to incorporate the controls.

Microspor. 54. *Trisporula* from *Psittacus*. *Excerpta*—
Paragraphs 5 017, 5 214 and 5 025, make reference to the diagnosis
of *Trisporula* that must be collected and brought to Land diagonals.
The authors have been to see some interesting on some short-cut of approved
diagnosis for *Trisporula* and *Trisporula*. Before any notice for
diagnosis was obtained the Landfall species for diagnosis of *Trisporula*
must be identified and accepted.

Paragraphs 5.018, 5.019 and 5.020 make reference to the contamination that might be experienced as the result of an accident.

These references would seem to be conclusive evidence that the persons involved in writing the report are not sure of what was actually happen. Such assurances are unsatisfactory.

When you consider that the Congressmen have spent millions of dollars to clean up the Lake and still have a long way to go, that even the mention of contamination, illness, death, must not be tolerated.

DC-A-9

The paragraphs referred to (paragraphs 5.018, 5.019, and 5.020) are summary statements concerning impacts of accidents that are treated in more detail in the main body of the report. It must be borne in mind that, because of the large number of variables involved, it is not possible to predict a specific accident or its consequences precisely. The accident analysis does, however, indicate the likely magnitudes of the impacts of representative accident scenarios.

3-161

Forest District Civic Association

INCORPORATED

Corps of Engineers
E.I.S. Draft Impact Statement Comments
Gas Drilling Lake Erie
Page 4 of 5

Electric Generating Plants and Food Processing Plants

FDCA-10 At two of the public meetings conducted by New State Legislatures in the past concerning lake drilling, we have posed a question about the adverse effect that contaminated water you have upon the steam electric generating plants at Dunkirk and Tonawanda.

We have never had an answer to these questions. We cannot find any reference to these plants in the E.I.S.

FDCA-11 We have also posed the same question with regard to the many food processing plants located in the area that depend upon a supply of potable water. This question has never been resolved and the E.I.S. does not make any reference to the question.

The endangerment of the electric power generating stations and food processing plants would seem to outbalance any beneficial effects that might economically accrue to the State of New York through revenues obtained from gas drilling.

Monitoring of Drilling Operations

Because the lands under the lake are owned by the State of New York, the Commonwealth of Pennsylvania and the State of Ohio a proposed set of Guidelines is recommended in Appendix D, paragraphs D.014 through D.041.

We cannot fault this progress which will require enabling legislation in all three states because there appears to be considerable discrepancy in the standards established by the State of New York and the Commonwealth of Pennsylvania as outlined in Table A1 of the Appendix.

FDCA-12 Both the Commonwealth and the State of New York require liability insurance of \$1 million for each adverse occurrence.

We feel that this amount is much too small to pay for damage that would occur because of a spill.

FDCA-13 The track record of the New York State Department of Conservation, in our opinion, has not been too good. At present the department is unable to properly supervise the operation of authorized landfills because of a shortage of personnel and funds.

FDCA-14 There does not appear to be any recommendations regarding the payment of costs for monitoring services. This burden should not be paid by the taxpayers. It has not been established that the cost of safe monitoring would enable the project to be economically feasible.

FDCA-10 Assessment of site-specific impacts is beyond the scope of this programmatic DEIS. Such impacts would be addressed on a site-specific basis by permitting agencies. See Topical Response Number 5 on Water Supplies and Treatment Costs.

FDCA-11 See Responses FDCA-10 and DOS-1.

FDCA-12 Statement of opinion noted. See paragraphs 1.082 and 1.083 of the DEIS for recovery of costs and determination of liability under Section 311 of the Federal Water Pollution Control Act.

FDCA-13 Statement of opinion noted.

FDCA-14 The Forest District is correct that no recommendation for monitoring cost pickup is made. Usually, it is assumed the exploration company will pay. To recommend whether the company or taxpayer should pay those costs is a normative recommendation in wealth distribution theory and outside the scope of this EIS.

[illegible]

Parents Meeting Child Association, Inc.
for the Committee

Martha S. Jarman
Martha S. Jarman
Corresponding Secretary

CC: Dr. M. J. Murrie
Harry M. Murrie
Robert O. Murrie
Fella L. Estemero
Michael J. Murrie
Robert B. Robinson

ELMA ENVIRONMENTAL COMMISSION

ELMA, 400 YORK ST.
January 25, 1982

Project Manager, Arthur Paine
Canadian Environmental Defence
1775 Steeles Street
Burlington, N. Y. 13027

REURMIS: See Drilling in Lake Erie

Dear Sir:

Please forgive our tardiness in responding to the CEF in the subject matter. We were not aware of the letter until the weekend of January 11. It is currently going to the President.

EEC-1: In the middle section, January 11th, the Elma Environmental Commission (Elma) (a committee member), authorized the Secretary to address a letter to you indicating their support for the positions expressed by County Executive Richmond and Mayor Pettit in attached news articles.

In addition, members expressed the following:

EEC-2: They question the ability of using Canada's reputation as an indication that it would be replicated by drilling on the western side of the lake. It was felt that the Elma Environmental Commission should be more active in the area of environmental protection on the western side than on the Canadian side. In addition, the Commission should be more respectful attitude by Canadian interests toward their environment and that Lake Erie is currently utilized by American interests.

EEC-3: As mentioned by County Executive Richmond, we question the wisdom of endorsing drilling on the western side of the lake. We feel that the Elma Environmental Commission should be more active in the area of environmental protection on the western side than on the Canadian side. In addition, the Commission should be more respectful attitude by Canadian interests toward their environment and that Lake Erie is currently utilized by American interests.

Respectfully submitted,

Elma Environmental Commission

Bruce Jones, Chairman

Paul J. Jones, Vice-Chairman

Philip J. Jones, Secretary

Joseph J. Jones, Treasurer

Patricia J. Jones, Public Affairs

Clay J. Jones, Clerk

John J. Jones, Member

James J. Jones, Member

EEC-1: Letters of comment on the EECs were received from the Mayor of Buffalo, N.Y. and the Erie County Executive (CEA). Refer to those letters and our responses to the issues.

EEC-2: See Topical Response Number 1 on the Canadian Experience and Topical Response Number 2 on Impact of Accidents: Contamination of Canadian Experience.

EEC-3: See Topical Response Number 8 on Glycol Chlorination, Topical Response Number 9 on Water Supplies and Treatment Costs, and Topical Response Number 12 on the Need for Natural Gas.

THREE NEW YORK STATE
COUNTY COUNCILS
COUNTY COUNCIL REGULATION
COUNTY COUNCIL REGULATION
COUNTY COUNCIL REGULATION
COUNTY COUNCIL REGULATION
COUNTY COUNCIL REGULATION

Western New York Environmental Federation

1100 P.M.
Tuesdays,
January 21, 1981

General Council P. J. Jensen
J. S. Corps of Engineers
5 N. Arthur Minto, Permit Section
178 Niagara Street, Buffalo, New York 14207

Dear Sirs,

WEF-1

On Sunday, January 18, 1981 by unanimous vote, our Protection of 6 counties emphatically has gone on record against the proposed Lake Erie Plan for gas drilling. Our main concern is for the water quality of Lake Erie and the possibility of its degradation for the millions of those dependent upon it.

WEF-2

A main concern is that of methane loading!! Canadian drilling wells show an above background area of ethane, propane and butane, 4-12 times greater than U.S. waters. Canadian waters also had significantly higher mean concentrations of these constituents. This and other factors are stated in Zapotosky's and White's report entitled, "A Reconnaissance Survey for Lightweight and Carbon Tetrachloride extractable Hydrocarbons in the Central and Eastern Basins of Lake Erie" published October 1980.

When the New York State Conservation Council convenes in late February or early March of this year I will recommend similar action by the whole Council comprising all counties in our state, of which there are 62.

Respectfully submitted,

John H. Buns
John H. Buns, President

This message comes to you on recycled paper

Position on U.S. Lake Erie gas development is noted. See Topical Response Number 5 on Sediment Resuspension, Topical Response Number 3 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs.

Methane loading may contribute to the formation of anoxic conditions. In all known situations, there is a narrow zone of maximal methane oxidation near the sediment-water interface and a lower oxidation rate (10x) in the water column. Also, maximal oxidation of methane occurs primarily at low oxygen concentration (<1 ppm). Welch et al. (1980) think naturally produced methane is primarily oxidized at the sediment-water interface. There were no indications of oxygen depression at natural gas input sites in unstratified areas or in the hypolimnion of the eastern basin of Lake Erie (Zapotosky and White 1980). Production of anoxic conditions during periods of ice cover are unreported and appear unlikely, based on reported oxygen concentrations in the water column. In the central basin hypolimnion, natural gas inputs were contiguous with biogenic methane inputs; therefore, the effects of each on oxygen depletion could not be distinguished. Generally, maximum methane concentrations from biogenic sources are 3 to 10 times greater than those associated with natural gas releases (Zapotosky and White 1980).

The proposed action considered in the DEIS is the development of natural gas, not gas and oil as in CLEAR Technical Report No. 132 (Michael and Herdendorf 1980).

See also Response MCH-1.

January 11, 1981

Col. George P. Johnson
District Engineer
U.S. Army Engineer District
1775 Niagara Street
Buffalo, NY 14207

Dear Colonel Johnson,

The Erie County Council of Sportsmen's Clubs is vitally interested in the proposed drilling for natural gas in Lake Erie. While we would agree that the economic benefits of such a move are important, we also feel that the potential for accidents in such development as currently described in the Corps D.E.I-3, poses serious problems that would be not only environmentally hazardous but also economically destructive to the Lake Erie coast line of Pennsylvania.

ECS-1 { Our judgment in this matter is supported by evidence from two major professional sources. One is testimony given in Harrisburg in 1980 by the Erie City Water Department, which was so compelling that it produced an injunction against drilling in the lake at that time. We feel the evidence generated in those hearings is still valid for consideration in the present situation and encourage your people to review this testimony before deciding to issue any permits for lake drilling.

ECS-2 { Our second source is the recent review of the problem made by the Erie County Health Department, which encompasses many of our concerns on the lake's fishery, and water quality as well as impacts on Presque Isle State Park.

Therefore, we echo this department's request that no permits be issued for drilling for natural gas in Lake Erie until all environmental problems are resolved connected with such operations.

Yours truly,

Richard J. Kubiak
Richard J. Kubiak
Chairman, Environmental Committee
Erie Co. Council of Sportsmen Clubs

ECS-1 Although the cited 1968 information may have initially contributed to the ban on U.S. Lake Erie gas development offshore of Pennsylvania, additional proceedings by the state resulted in the lifting of the ban in 1977 (see paragraph 1.002).

ECS-2 See Responses to the Erie County Health Department letter (CEH).

Town of Hamburg

President
 Vice President
 Clerk
 Treasurer
 Assessor
 Engineer
 Fire Marshal
 Health Officer
 Police Chief
 Town Clerk



Mayor
 Town Engineer
 Town Assessor
 Town Clerk

STATE OF NEW YORK - COUNTY OF HAMPSHIRE, NEW YORK 12073

IN SENATE

February 10, 1981

Col. George P. Johnson
 Corp. of Engineers
 1778 Niagara Street
 Buffalo, New York 14207

Dear Col. Johnson:

We are enclosing copies of the resolutions
 that were adopted at the regular meeting of the Town
 Board on the 9th of February, 1981.

These are to be included in the public
 meeting on Wednesday, February 11, 1981.

Thank you.

Sincerely,

Arthur C. Neal
 Arthur C. Neal
 Town Clerk

PMA:ed
 BAC

Town-1 Statement of resolutions voted.



Pennsylvania Electric Company
1001 Second Street
Scranton, Pennsylvania 18503
814 333-9111

When I Contact Our Offices
814 533-8568

November 18, 1980

Colonel George P. Johnson
District Engineer
Regulatory Functions Branch
Buffalo District Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207

Dear Colonel Johnson:

SUBJECT: Comments on Draft Programmatic EIS
U.S. Lake Erie Natural Gas Resource Development

The following comments are submitted on behalf of Pennsylvania Electric Company (Penelec), a subsidiary of General Public Utilities Corporation (GPU).

During our review of the subject draft EIS, we noted that two GPU projects were referenced in Table 3-16 for Erie County, Pennsylvania. For clarification, the following information is offered:

GPU-1 1. Cobo Generating Station - Unit 1

In December, 1979, GPU Service Corporation submitted an environmental report to the U.S. EPA Region III, Philadelphia, which was prepared in support of a coal fired steam electric generating station to be constructed in Girard Township, Erie County, Pennsylvania. A copy was also sent to Mr. Arthur Harris of your office. The applicant, Penelec, has worked closely with the U.S. EPA in their preparation of an EIS for this project. The scheduled date of commercial operation for Cobo, as stated in our EIS, is June, 1988.

GPU-2 2. Lake Erie Interconnection Project

On June 25, 1980, Jersey Central Power & Light Company (JCP&L), also a subsidiary of GPU, filed an application with the Department of Energy's Economic Regulatory Administration for a Presidential Permit to install and maintain electric power transmission cables under Lake Erie from Ontario Hydro System in Canada to the Cobo site, and then overlaid by overhead transmission lines to GPU's Erie West Substation. From there power would be delivered across an existing transmission system to the JCP&L service territory in New Jersey. On October 30, 1980, JCP&L submitted an environmental report to the EPA in support of the Presidential Permit application. On November 5, a copy of this report was also sent to Mr. Len Kotlikowicz of your office. The project consists of construction of a 1000 MW, 2550 to 325 kv dc cable system from the U.S./Canadian international border to the Cobo site, overhead transmission lines and appropriate dc/ac inverter station. The scheduled operation date is December, 1984.

Pennsylvania Electric Company is a Member of the General Public Utilities System

GPU-1

The more definitive scheduled commercial operation date for the proposed Cobo Station is noted and falls within the range given in the DEIS. The Buffalo District is cooperating with both the USEPA Region III Office and the GPU Corporation on the review and analysis of the Cobo Station. This will facilitate coordinated planning between projects.

GPU-2

The conceptual design characteristics of the proposed cable as 1000 MW and about 250 to 325 kv is noted. Although it differs slightly from the earlier information available to us when scoping the DEIS, this would not affect the conclusions reached in the DEIS. The scheduled operation date is noted and is within the range given in the DEIS. The Buffalo District is a cooperating agency with the Department of Energy on preparation of an EIS for the Lake Erie Interconnect Cable.

Subject: George P. Johnson

42-

November 18, 1955

SP-1

The efforts of potential subjects of the Bureau have been observed during the development of the Bureau's program. It is noted that all individuals who are in contact with the Bureau are being monitored. It is noted that all individuals who are in contact with the Bureau are being monitored. It is noted that all individuals who are in contact with the Bureau are being monitored.

There are for the opportunity of attending in the room in April 1955 for the Bureau's program. It is noted that all individuals who are in contact with the Bureau are being monitored.

Very truly yours,

J. Edgar Hoover

James E. Sullivan
Special Agent in Charge

cc:

Mr. Boardman
Mr. Nichols
Mr. Rosen
Mr. Tamm
Mr. Winterrowd

20-1
Comment noted

Penelec/GPU

Pennsylvania Electric Company
100 Broad Street
Philadelphia, Pennsylvania 19107
814 533-4111

West's Direct Dial Number
814 533-4576

January 28, 1981

Mr. Arthur E. Marks
U. S. Army Corps of Engineers
1176 Niagara Street
Buffalo, NY 14207

Dear Mr. Marks:

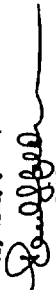
SUBJECT: Lake Erie Natural Gas Drilling DEIS

On behalf of the Pennsylvania Electric Company, which is an operating subsidiary of General Public Utilities Corporation, and our two sister utilities, Jersey Central Power & Light Company and Metropolitan Edison Company, I wish to make the following comments concerning the Corps of Engineers and EPA's DEIS for offshore gas drilling.

GPU-4 { Penelec strongly urges that the Corps and EPA establish a buffer zone on either side of existing or currently proposed utility installations. Such a buffer zone is mandatory not only to protect the utility's investment, but to ensure that drilling will in no way interrupt the service(s) provided by the utility. It is our recommendation that a buffer of 300 meters on either side of existing or proposed facilities be required to ensure the safety and reliability of utility installations.

On behalf of the GPU system, I wish to thank you for allowing us to submit our comments for review by the Corps. Should you have any additional questions concerning the issue of a "buffer zone" please feel free to contact me at the above telephone number.

Very truly yours,


Paul S. Feldman
Supervisor-Licensing-Generation

dm

As indicated in paragraph 4.193, lease sales will have to be designed to keep gas development activities away from the planned underwater cable. Additionally, the Corps would be required to process permit applications for various gas development activities such as drilling, wellheads, pipelines, etc. The public interest review performed by the Corps would include consideration of existing and planned utility lines in the Lake. The review process includes notification by public notice to the owner/operator of utility lines in the project area. Rather than set a buffer zone at this time, we believe that specific information concerning gas development sites and proposed procedures and specifications about utility line locations, installation, maintenance, and operation would lead to better definition of potential problems and necessary measures to avoid or mitigate these problems. It would also be necessary to know the procedures proposed by gas development operators in regard to pipeline and wellhead installation and maintenance. The recommendation of 300 meters on each side of the proposed cable is noted. However, we believe that site-specific determinations would lead to more accurate determinations necessary for protection of each utility line in the Lake.

GPU-4

December 11, 1980

George P. Johnson
Colonel, Corps of Engineers
District Engineer
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

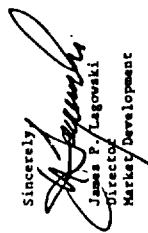
Dear Colonel Johnson:

Thank you for the opportunity to review the enclosed EIS on Lake Erie natural gas development. The unmarked report is being returned for reuse.

DTED-1 In reviewing the report I noticed there is no discussion of the very long Canadian experience with natural gas development in Lake Erie. The enclosed abstract from the report noted summarizes this successful experience. Note that the author of this writeup was Glen Greve of the Ontario Ministry of Natural Resources.

DTED-2 Finally, I find it strange that in light of our extreme dependence on foreign oil, we are not exploring ways to extract the known oil resource under Lake Erie in an environmentally acceptable way.

Sincerely,


James P. Lagowski
Director
Market Development

JPL:wjf

Attachments

DTED-1

Refer to Topical Response Number 1 on the Canadian Experience. We have reviewed the enclosure cited in the comment and find that it provides information on the history of the Canadian Lake Erie program and various recommendations that were made by the International Joint Commission (IJC). The text of the enclosure is very similar to both the information contained in our Phase 1 report (McGregor et al. 1978) and the discussion contained in the DEIS relative to IJC recommendations. The enclosure contains no information concerning measured impacts of gas development in the Lake or any information that would change the conclusions reached in the DEIS.

DTED-2

The Reference Program prohibition on oil development in Lake Erie is based on the recommendations made by the IJC, as discussed in paragraphs 1.002 and 1.022. Also, we are analyzing the impacts of gas development in Lake Erie on the federal level because of renewed interest in such development by the states of New York, Pennsylvania, and Ohio. The level of interest expressed in regard to natural gas development has not been expressed for oil development.

We appreciate your cooperation in our effort to recycle copies of the document.

January 5, 1981

Colonel George P. Johnson, District Engineer
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, NY 14207

ATTENTION: Regulatory Functions Branch

Dear Colonel Johnson:

As per your letter dated November 10, 1980, the Draft Programmatic Environmental Impact Statement: U.S. Lake Erie Natural Gas Resource Development has been reviewed, and our comments are presented below. Due to time restraints, it is not possible to comment on all the salient points of this document at this time. Therefore, this letter will present the major criticisms we have to date. Our comments on the potential environmental impacts of drilling for natural gas on Lake Erie will be reserved until the time a permit application is submitted to your office.

RC-1 As regards to our comments on this D.E.I.S., I would first like to point out informal, undocumented conversations with unidentified persons are not generally considered acceptable sources of information. For example, on page 1-20, some of the data dealing with the reservoirs of natural gas were obtained through "informal discussions with geologists and operators". In the first paragraph on page 1-21, a sentence begins "Most field operators admit...". These examples are just two of a number of cases where questionable references are cited. The reviewer is unable to judge the accuracy or reliability of the information presented without some knowledge of the credibility and qualifications of the sources. Since some of the information from the unidentified sources are used to form a number of the assumptions on which the "Reference Program" is based, the accuracy and acceptability of the entire program is subject to question. If the presently unidentified sources of "informal" information cannot be identified and documented, all information derived from these sources should be deleted from the D.E.I.S. as being unacceptable. The accuracy of the information in this D.E.I.S. is important due to the fact that this report may serve as the foundation for environmental assessments of future Lake Erie drilling programs.

RC-2 Our second comment regards the treatment given the economic feasibility of the "Reference Program" in the D.E.I.S. The three states will not realize the projected revenues if the wells are not drilled. Appendix B presents the costs

RC-1

It is the responsibility of a professional to make evaluations and judgments on the basis of the best information available. Where better information is not available, evaluation and judgment must be made on the basis of what information is available. In preparing this document, every effort was made to use the best information available, to clearly indicate the reliability of sources of information used, and to identify the sources with the degree of particularity appropriate to their reliability.

The citation in this comment from page 1-20 of the DEIS is taken out of context. The DEIS did not state that this was the only source of information, but rather that much of the information was from government record, published reports, and Canadian government reports.

RC-2

The staff agrees with the comment that it is difficult to address the cost borne by applicants (drilling operators) during the permit process. Total investment cost to develop the 16 lease areas of the development program and the resultant net present values are estimated to range between \$28 million to \$650 million and \$41 million to \$850 million, respectively. Even the cost associated with worst-case scenario of obtaining permits would not alter the economic decision to develop U.S. Lake Erie gas.

Also, this comment assumes that all future actions will constitute a Major Federal Action Significantly Affecting the Quality of the Human Environment and thus require the preparation of an EIS. The Corps has not made such a determination. Refer to the EPA letter (EPA) of comment and the Chautauque County Department of Planning and Development letter (CCD) concerning EIS requirements. Comparisons of state hearing procedures to those that are contained in the Corps permit program are inappropriate. The Corps hearings are not lengthy processes and are not adversary type hearings with cross-examination of witnesses. The cost to applicants for Corps public hearings is minimal.



[illegible]

Thank you for allowing us this opportunity to comment on the Lake Erie D.R.I.B. We would appreciate the opportunity to review and comment on similar Corps of Engineers' projects in the future.

Kevin C. Owen
Kevin C. Owen
Environmental Specialist

Section 10

In paragraph 2.035, it was pointed out that "at present, there are no commercial wells producing" geopressed aquifers and only two experimental attempts have been made. Gas properties from this source will be in the distant future. The most likely gas properties for warm gas aquifers are summarized in paragraph 2.044-2.046. In an important point, all domestic sources of energy will have to be utilized including offshore natural gas development. See Appendix A, response number 12 on the need for Natural Gas.

STATE UNIVERSITY COLLEGE AT BUFFALO
THE UNIVERSITY OF THE STATE OF NEW YORK



STATE UNIVERSITY COLLEGE AT BUFFALO
BUFFALO, NEW YORK 14227

7 January 1980

Col. George P. Johnson, District Engineer
Buffalo District, Corps of Engineers
179 Niagara Street
Buffalo, New York 14207

RE: Draft EIS - "Lake Erie Natural Gas Resource Development"

Dear Col. Johnson:

I am submitting the following preliminary comments, regarding the above, in order to meet the 12 January 1980 deadline as stated in the letter of 10 December 1979. However, per our telephone conversation of that same date, I am submitting these comments in order to provide you with up to the time of the public hearing which is tentatively scheduled for the end of this month.

SL-1

It is not in agreement with some of the conclusions in the draft EIS that the Lake Erie Basin is a natural gas resource. The basis for this conclusion is the fact that a considerable amount of gas has been produced from the basin since 1950. However, per our telephone conversation of that same date, I am submitting these comments in order to provide you with up to the time of the public hearing which is tentatively scheduled for the end of this month.

SL-2

The EIS states that the Lake Erie Basin is a natural gas resource. The basis for this conclusion is the fact that a considerable amount of gas has been produced from the basin since 1950. However, per our telephone conversation of that same date, I am submitting these comments in order to provide you with up to the time of the public hearing which is tentatively scheduled for the end of this month.

SL-3

The EIS states that the Lake Erie Basin is a natural gas resource. The basis for this conclusion is the fact that a considerable amount of gas has been produced from the basin since 1950. However, per our telephone conversation of that same date, I am submitting these comments in order to provide you with up to the time of the public hearing which is tentatively scheduled for the end of this month.

SL-1

The potential supply of natural gas from other sources and its availability to end-users of the Lake Erie Basin is addressed in the DEIS. All alternative sources of energy supply (e.g., solar, wind, hydro, etc.) were not addressed; such discussion is beyond the mandate of this DEIS. See Topic Response Number 12 on the Need for Natural Gas.

SL-2

Although the Lake Erie region did not experience natural gas shortages and curtailments during the past two winters, there is no reason to believe that a reduction of events which occurred during the winters of 1976-1977 and 1977-1978 will not occur. The Energy Regulatory Commission system of curtailments is based upon a priority system. The system is still in effect and will be imposed upon end-users in the event of future natural gas shortages.

SL-3

The ultimate distribution of any natural gas produced in Lake Erie cannot be determined at this time. There are several distribution alternatives. For example, the gas could be developed and used by the producer on a self-help basis; the gas could be sold to a local utility (e.g., the Lake Erie Natural Gas Company) for local distribution; or the gas could be sold to a major producer-transmission company and piped out of the region for consumption in other parts of the country. Due to the economics of gas distribution and the demand for gas in the Lake Erie Basin, it is likely that the gas would be developed by a major producer-transmission company. The Lake Erie Natural Gas Company, for example, and sold to local utilities to be utilized within the heavily industrialized Lake Erie region.

CONCISE RESPONSES - ENCLOSE

511-4

5-779

The potential source of polyethylene glycol is a broken glycol feeder line. If a glycol line is broken, the gas line or the gas line or it is broken sufficiently far from the gas-line break that the gas is escaping as water, the higher density of the glycol (relative to that of water) will tend to sink, rather than float, to the lake bottom, thus isolating it from mid-depth regions where it would be located. Since near-bottom current speeds are smaller than those higher in the water column, this also restricts the speed of down-transport.

In the event that glycol is transported upward by currents induced by gas rising from a pipe break, the flow is expected to be highly turbulent, causing rapid mixing of glycol and lake water and thus eliminating the density difference. The current speed used in estimating down-current glycol concentrations was 35 cm/s, well above speeds expected at mid-depth.

See Response CEXN-6.

See Response ENCA-5

644-8

Some of the data on seismicity were taken from the Lawler, Matuskay & Skelly report as cited, but additional information and data from a number of other sources pertinent to regional seismicity (cited in the DEIS) were also analyzed and assimilated in the preparation of paragraphs 1.053 through 1.056.

Col. George S. Johnson

Page 2

GL-9

We believe that there is sufficient justification to recommend that the Department of Defense be authorized to conduct a balanced and objective study of each of the subject matters. Any information on the cost of spill cleanup and the development of alternate water supplies and alternate water supplies should be included.

Sincerely,

Ray Young
Robert A. Young

Enc. 1

GL-9

Information on the costs of cleanup are addressed in paragraphs 1.081 and 1.082. Paragraph 1.081 addresses the costs of cleanup of accidents which are caused by the release of hazardous materials to the state (top of 1.088). The need for alternate water supplies due to releases from routine operations or accidents is not addressed (paragraphs 4.071-4.073). See Topical Response Number 9 on Water Supplies and Treatment Costs.

THIS IS A REPLY TO THE ORIGINAL LETTER OF COMMENT FROM THE PENNSYLVANIA FISH PRODUCERS ASSOCIATION, NATION FISHERIES, RD #1, BOX 109, PENNSYLVANIA, PA 15111. THE ORIGINAL LETTER DID NOT REFERENCED WELL TO THE REASONING THIS REPLY TO THE ORIGINAL LETTER. THE REASONING IS ON FILE AT THE BUFFALO DISTRICT OFFICE. THIS IS A VERBATIM COPY.

NATION FISHERIES, RD 1 Box 109, E. Springfield, Pa. 16411
(814) 922-7943
PENNSYLVANIA FISH PRODUCERS ASSOCIATION
RD #1, Box 109, E. Springfield Pa. 16411
January 6, 1980

C.S. New Corps of Engineers
1774 Niagara St
Buffalo, NY 14207

MEM-1
Question: Re: Staff programmatic environmental impact statement: O.S. LAKE ERIE
NATION FISH PRODUCERS ASSOCIATION, NATION FISHERIES, RD #1, BOX 109, PENNSYLVANIA
IS it anticipated that commercial fishing will resume?

For your information approximately 142 people are dependent on the commercial
fishing industry in the Commonwealth of Pennsylvania. Tackle Corp. which with their
the source of Pennsylvania. In the event of a collapse of the commercial fish
of our industry has taken place and on Lake Erie a permitting license with the commercial
food production. Our concern is that the present state quality of the Lake Erie basin
be maintained.

MEM-2
We have even where the commercial fleet in Canada have had problems with the
operation of drilling equipment in the lake. The movement of rigs and pipe sometimes
causes the bottom to be disturbed. The movement of the well heads
causes the bottom to be disturbed. We would expect to be able to maintain the lake
bottom to be disturbed in any further decisions that would affect the future of
the lake.

Sincerely,
Corylann Mann, secretary /s/

See Response DOI-17. The staff acknowledges that an error was made; however, it
is not clear on the impact analysis since the analysis assumed protection of
commercial fish. The staff is not aware of any specific proposals for development
activities on fish are discussed in paragraphs 4.046 to 4.049 and 4.050. No
detectable impacts to Lake Erie fish populations are projected to occur from gas
development in the Lake.

MEM-2
The potential effects on commercial fisheries from gas development activities
and suggested mitigation for the Reference Program are derived from the Canadian
staff's analysis of the Lake (see paragraph 3.058). We concur with your statement
that such problems are not likely to occur. The staff is not aware of any
Minor Fisheries is advised of the results of this programmatic study. If
development is ultimately found acceptable in principle, we would advise you of
any specific proposals received by this office.

"Names in plaintext with amplifiers." - James Newman

Universal Field Foundation

435 CECILIA AVENUE
BUFFALO 14, N. Y.

Jan. 9, 1981

United States Army Corps of Engineers

RESPONSE TO YOUR REQUEST FOR ENVIRONMENTAL IMPACT STATEMENT'S ON LAKE DRILLING

UFF-1 We are opposed to drilling in the Great Lakes for gas and oil because the need is so small in proportion to the environmental risk. The 1980 American Gas Association report "The Gas Energy Supply Outlook 1980-2000" forecasts a good supply of natural gas from proven land reserves without any gas from the Great Lakes, so there is no need for lake drilling during this period.

UFF-2 The plans presented are ambiguous or neglectful in stating all of the environmental hazards. The Great Lakes are the world's greatest supply of good drinking water. Just as industrial pollution in the West is endangering causing "acid-rain and snow" in New York State, drilling in the upper Great Lakes can cause pollution in Lake Erie and contaminate Buffalo's water supply.

UFF-3 We suggest Standards set in the 1978 Water Quality Agreement must be mandatory.
UFF-4 Higher earthquake risk must be considered, especially since there are many nuclear reactors and the West Valley repository of nuclear wastes in the area. Also many dangerous chemicals are being manufactured along the shores of the Great Lakes.
UFF-5 Canadian experience cannot be used as a basis for study since most of their drilling has been in shallow, off-shore water - not deep-water drilling in the lake.

UFF-6 Both the health and economic costs of water supply must be considered. Sufficient funds must be bonded to cover possible oil-spills, accidents, damages to water supplies, damages to persons harmed by change in the water supply. Local people must be trained for clean-up operation, studies must explore the possibility of contamination thru drinking water, the atmosphere or the food chain by PCB's from heat exchangers and mercury from anodes. Blow-out-preventors are far from fool-proof. More adequate fire-control systems are needed as with the recent Mt. Neil fire in Lake Erie.
UFF-7 What are the plans for re-servicing production equipment? In laying pipe will the sediments be disturbed, re-introducing contaminants into the water column? Will phosphorous from the sediments enter the water column and cause greater growth of algae with the resultant change in taste, and oxygen depletion in the water?

UFF-8 Therefore we recommend that no lake drilling be considered until 75% of the land's proven resources be depleted, and that before any future lake drilling is undertaken, there be considerable improvement in the state of the art.

Ch. J. R. R. R.

UFF-1 Position on U.S. Lake Erie gas development is noted. See Topical Response Number 12 on the Need for Natural Gas. Also, on page 5 (Table IV-1) of the American Gas Association (AGA) 1980 report, a decline in lower-48-state production from 16-19 Tcf to 12-14 Tcf in 2000 is shown. The loss must be supplemented by other sources such as imports, Alaskan gas, LNG, and nonconventional sources. This is premised on the gas industry maintaining a 26% share of total energy, and any worsening of the petroleum situation could shift the gas share higher. On page 13 of the AGA report, the statement is made that "it is clear that conventional gas supplies will not be adequate." On the same page, the statement is made that "with increasingly pessimistic oil supply picture, the nuclear hazard uncertainties, and the woes of direct coal use, it makes sense to plan gas supplies conservatively, to shoot for the full potential range of supplemental gas supplies while attempting to boost conventional production at the same time." Although the 1980 AGA report may present an optimistic outlook for gas, the tone of the report is very cautiously optimistic and advises of uncertainties in forecasts.

UFF-2 See Topical Response Number 8 on Glycol Chlorination and Topical Response Number 9 on Water Supplies and Treatment Costs.

UFF-3 See Topical Response Number 5 on the Great Lakes Water Quality Agreement of 1978; the 1909 Boundary Waters Treaty between the U.S. and Canada; and the International Joint Commission.

UFF-4 Information on the seismic activity of the Reference Program region is presented in paragraphs 1.053-1.056. The conclusion reached is that the intensity of earthquakes expected for the region is not anticipated to have significant, if any, effect on offshore operations. The presence of facilities mentioned in this comment would have no effect on any earthquake intensity and thus no effect on structures associated with gas development.

UFF-5 See Topical Response Number 1 on the Canadian Experience.

UFF-6 See Topical Response Number 7 on Contingency Plans and Cleanups, Topical Response Number 8 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs.

UFF-7 See Topical Response Number 6 on Sediment Resuspension.

UFF-8 Fire prevention equipment on vessels (rigs, tugs, barges, etc.) operating in U.S. Lake Erie waters would have to comply with offshore regulations, which should be adequate for Lake Erie natural gas development.

UFF-9 Very little production equipment exists under water, and it is doubtful it will need reservicing during the life of the wells.

UFF-10 Statement noted.

15 Tampa Ave
Buffalo 7, N.Y. 14220
9 January 1961
9:47 am

Dear Col. Johnson -

This coming Monday 12 January 1961
is the deadline for filing comments on
the proposed gas drilling in Lake Erie.

We need the water, we don't need
the gas. We can't live without water, we
have alternate sources of heat if necessary.

What will happen to a drilling rig
if the ice that is now allowed to accumulate
under the lake starts moving and breaks it
over.

My comment air, don't allow them to
do it, it is not necessary and could do
nothing but harm.

Sincerely

John W. Hyman
John W. Hyman
1000 E. 1st St.
Buffalo, N.Y.
Virginia M. Hyman

JW-1
JW-2
Position on U.S. Lake Erie natural gas resource development is noted.
The Reference Program drilling seasons are designed to reflect the dates that
the Reference Program would not be operating in ice cover
(see Table 1-7 and paragraphs 1.049 and 1.050).

COLUMBIA GAS SYSTEM SERVICE CORPORATION

January 9, 1981

Colonel George F. Johnson
District Engineer
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Johnson:

Re: Draft Programmatic EIS, "U.S. Lake Erie
Natural Gas By-Product Development"

Columbia Gas System appreciates the opportunity to comment on the draft programmatic EIS. The subject of the EIS is "U.S. Lake Erie Natural Gas By-Product Development".

Columbia is one of the largest natural gas systems in the United States and is composed of Columbia Gas System, Inc., a registered public utility holding company, a service company and seventeen operating subsidiaries. The service company and operating subsidiaries are engaged in the production, purchase, storage, transmission and distribution of natural gas at wholesale and retail. Columbia supplies directly through its retail operations, or indirectly through other utilities, approximately 15 million customers in 15 states. Columbia has a service area including large parts of the states of Ohio, Pennsylvania, New York, West Virginia, West Virginia, Maryland and the District of Columbia. Columbia serves a retail 1,850,000 customers residing in communities with a total population of 7,400,000.

Columbia has an interest in this proceeding and furnishes the following section-by-section and general comments for consideration.

Page 1-3, Demand for Natural Gas by Regional Industrial Gas Consumers

CSS-1 There should be an additional section which discusses the use of gas by residential customers in this region with some detail of the 1976-77 natural gas shortage problems experienced by both industry and residential sectors.

Page 1-4, S. 1.014

CSS-2 This section should have quantified the economic impact of "plant closing and employee layoffs" in numerical terms of dollars and unemployment rates of the various states involved. Examples from the 76-77 winter gas shortage would be illustrative.

Page 1-7, S. 1.021, Lines 12-14

CSS-3 This sentence implies that the Reference Program will establish environmental acceptability and form the basis for rejection or acceptance of natural gas development in Lake Erie. Development of Lake Erie gas will have to be based on several considerations--economic, political, energy supply and demand needs and the beneficial environmental results from the use of natural gas as a fuel in place of oil and coal. Acceptance or rejection of a program must be based on all of these considerations, not solely on environmental acceptability of certain permitting activities associated with energy development.

Page 1-37, S. 1.063

CSS-4 The Task Force mentioned in this paragraph should have representatives from the Natural Gas Industry to provide their expertise in the engineering, environmental and legal aspects of the development of this resource.

Page 1-40, Table 1-10

CSS-5 It is apparent that appreciable time has passed since this EIS was prepared because some of the information regarding applicable regulations is wrong. Drilling muds, for example, are exempt from the provisions of the Resource Conservation and Recovery Act (RCRA).

CSS-1

The industrial use of natural gas was emphasized in the DEIS. A primary reason for this was that during the 1976-1977 natural gas shortage, industrial gas users in the Lake Erie region experienced curtailments, whereas the residential sector did not.

CSS-2

Industrial natural gas shortages to the Lake Erie region during the winters of 1976-1977 and 1977-1978 created severe economic hardships to numerous industries and their employees. Although a number of newspapers in the region carried daily accounts of "plant closings and employee layoffs", no comprehensive economic analysis of this crisis could be located.

Based on comments from the Federal Energy Regulatory Commission (FERC), the long-term effects of the Natural Gas Policy Act cannot currently be predicted. Thus, although information on the economic impact of the 1976-1977 shortage may be illustrative, it is not necessarily predictive.

CSS-3

The Reference Program is being used to determine if gas development can be accomplished in an environmentally acceptable manner in principle. If the program is ultimately judged acceptable, it could be used as a guideline or reference point for the review of specific proposals. In the footnote at the bottom of page 1-7, it is noted that future program proposals could vary significantly from the Reference Program, could constitute relaxed technological standards, and could be evaluated on a case-by-case basis to determine the consequence of allowing increasing amounts of materials and residuals to enter the environment. However, if the Reference Program, which limits discharges to the smallest possible amounts, cannot pass the test of environmental acceptability, then in principle U.S. Lake Erie natural gas development must be rejected. This rejection includes consideration of the sensitive uses of Lake Erie water and the current economic and energy situation in the region. The DEIS discussed the economic and energy benefits in paragraphs 1.017-1.019, 1.150-1.162, 3.125-3.136, 4.157-4.175, and 4.180-4.187. For the purpose of the programmatic DEIS, the current political climate is taken to be the interest by the states in U.S. Lake Erie gas development. We agree there are certain atmospheric benefits when comparing the combustion of gas vs. coal and oil, particularly in terms of sulfur dioxide. However, we would also point out that the Powerplant and Industrial Fuel Use Act of 1978 reemphasizes the need for the United States to switch from oil and gas to more plentiful domestic hydrocarbon fuels such as coal (in terms of industrial use).

CSS-4 See Response EPA-11.

CSS-5 See Topical Response Number 13 on Waste Disposal.

- CSS-6 The Canadians have decades of experience in drilling for natural gas on their side of Lake Erie. It would be useful if the DEIS described how the Canadians handled various environmental aspects of drilling in Lake Erie, as for example, the handling of drill cuttings.
- Page 1-47, S. 1.074
- CSS-7 The Draft EIS does not consider FERC's role in the regulatory scheme. This must be included. If a final EIS is adopted, the other agencies involved should publish a memorandum of understanding to define the limits of any further site-specific EIS that may be needed before an activity can begin.
- Page 1-83, S. 1.111
- CSS-8 This paragraph and certain following paragraphs (discussed below) will have to be revised to reflect the Hazardous Waste Management System regulations promulgated May 19, 1980 (45 FR 33066).
- Page 1-83, S. 1.113
- CSS-9 Section 261.4(b) of the RCRA excludes certain solid wastes as hazardous wastes. These include "drilling fluids, produced waters, and other wastes associated with the exploration, development or production of crude oil, natural gas or geothermal energy." Thus, the last sentence of this paragraph is incorrect. These materials are neither special nor hazardous wastes. In fact, RCRA does not have a category of "special wastes" and this designation should be deleted from the DPEIS.
- Page 1-83, S. 1.114
- CSS-10 The extraction procedure has been promulgated at Appendix II, 45 FR 33127 (May 19, 1980); this paragraph must be revised.
- Page 1-83, S. 1.115 through 1.121
- CSS-11 These paragraphs need to be revised or deleted to reflect the exclusion of Section 261.4(b)(5) and the final hazardous waste regulations.
- CSS-6 See Topical Response Number 1 on the Canadian Experience. A brief description of the Canadian operations is contained in the McGregor et al. (1978) report.
- CSS-7 Although the role of FERC is discussed in paragraphs 1.014 and 2.007, we agree that further delineation of the Commission's role is desirable and have included an errata to the DEIS. See new paragraph 1.015a in the errata section of this Final EIS. The limits of any site-specific EIS that may be required can only be defined after consideration of the particular proposals and the proposed work sites. For example, if work were proposed in areas that are suspected of having contaminated sediment or in areas of important fish spawning, the EIS would be scoped differently than for a proposal that had very little potential to stir and release contaminated sediment or adversely affect fish populations. During the scoping process for an EIS, the Buffalo District does include the involvement of other agencies (state, federal, and local) and the general public, and one of the purposes of scoping is to ensure that limits of the analysis are clearly defined. Scoping also reduces duplication of efforts by involved agencies. Refer also to Response EPA-1 concerning EIS preparation.
- CSS-8 See Topical Response Number 13 on Waste Disposal.
- CSS-9 See Topical Response Number 13 on Waste Disposal.
- CSS-10 See Topical Response Number 13 on Waste Disposal.
- CSS-11 See Topical Response Number 13 on Waste Disposal.

Page 2-23, S. 2.088

CSS-12 { It should not be assumed that aerial crossings of rivers (suspended pipelines) are common industry practices. In fact, most all pipeline crossings of streams involve excavation of a trench and subsequent pipeline burial below the stream bottom. Aerial crossings are used when the physical parameters of the river indicate that a buried crossing is not desirable. Also, the DPEIS should reference DOI regulations (Part 191 and Part 192, Title 49 CFR).

Page 3-9, S. 3.027

CSS-13 { Consistency in units of measure would be helpful, i.e., use all metric, or all English units or both in all cases.

Page 3-9, S. 3.029

CSS-14 { Will the study of Zapotosky and White, 1980 be made available to the public? This section does not indicate any useful information. It should be expanded if it can be related to the Program or deleted if nothing definitive can be established.

Page 3-13, S. 3.054

CSS-15 { Second sentence typo, "pawfish" should be panfish.

Page 3-16, S. 3.057

CSS-16 { It is curious to note that the Canadian commercial fishery took 80% of the 19.5 million lbs. by harvest in 1977 while Canada successfully extracts natural gas from beneath the lakebed. A comment on the compatibility of the two natural resource management efforts is appropriate.

Page 3-47, S. 3.130

CSS-17 { This section does not say anything about the price elasticity of substitution of natural gas with other fuels. Also, this section does not indicate the energy efficiency and environmental benefits of natural gas compared to other fuels.

CSS-12

In paragraph 2.088, it is stated that pipelines could be buried (small streams) or suspended (rivers). We did not intend to imply that aerial crossings were common but that they are an option which is available.

CSS-13

A conversion table was provided in the DEIS.

CSS-14

There was no existing information on Lake Erie hydrocarbon levels and we needed an indication of existing levels to determine possible impacts on the existing environment. The study will also serve a purpose in the future if gas development in U.S. Lake Erie eventually occurs. The report was distributed to various public libraries along the Lake Erie coast and is available from the National Technical Information Service of the U.S. Department of Commerce (Springfield, VA 22161). It is also available for review at the Buffalo District office. Refer to Topical Response Number 1 on the Canadian Experience in Lake Erie for additional information. Additionally, the reports of Ferrante et al. (1980), Detmann (1980), and McGregor et al. (1978) are also available through the National Technical Information Service.

CSS-15

Typographical error is acknowledged. The correct word is "panfish" (second sentence, paragraph 3.054).

CSS-16

See Response DOI-17. Only a long-term detailed study including historical accounts of the fishery during gas development activities in Canada could provide any meaningful indication of the effects on productivity in Canada. Natural fluctuation in populations would also have to be considered.

CSS-17

In general study of the demand for natural gas, the cross-price elasticity of demand is found to be positive with respect to other fuels--if the price of substitute fuels (e.g., #2 oil or #6 oil, etc.) increases faster than the price of natural gas, more natural gas will be demanded. Currently, because the price of fuel oil is rising faster than the price of natural gas (on a Btu basis), one would expect the quantity of gas demanded to increase.

Paragraph 3.130 refers to an almost zero cross-price elasticity of demand in the short run. As such, there would be no substitution of natural gas for other fuels in the short run--gas would continue to be demanded for its primary use in the manufacturing process or as a feedstock.

Page 3-47, Table 3-13

CSS-18 This table does not utilize any FERC (government) or American Gas Association source documents in order to determine natural gas deliveries and curtailments to the various counties in the study area. This federal agency and AGA have published voluminous comprehensive and accurate data on the subject.

Page 4-11, Table 4-5

CSS-19 Under the heading "Activity: Release: Raw Natural Gas," a figure of 50 mg/l is quoted from Cleland and Kingsbury (1977) for freshwater Aquatic Life Criteria. It should be noted that the solubility of methane (the dominant component of natural gas) in water is quite low. Also, it should be mentioned that natural gas at concentrations which can be attained in water is not toxic to fish although during ice-cover conditions oxygen could be displaced by methane or used in oxidation processes (see Welch, H. E. et. al., 1980 Limnol. Oceanography 25(1) 100-113.). Also, an unpublished report of toxicity tests of natural gas on rainbow trout (Salmo gairdneri) indicated no fish mortality or acute toxic effects on rainbow trout in natural gas-saturated water as long as oxygen concentrations were maintained in the test aquaria, (Toxicity Tests of Natural Gas) (1977) Unpublished Report, Foothills Pipeline Limited, Alberta, Canada.

Page 4-23, S. 4.061

CSS-20 The "reef-effect" of offshore rigs should be mentioned. There are several publications (See Dugas, Z. et. al., 1979. Oil rigs and offshore sportfishing in Louisiana. Fisheries. 4(6). 2-10).

Page 4-57, S. 4.157

CSS-21 This section fails to indicate that the availability of natural gas to this region could possibly stimulate economic growth. This section also fails to point out that since the region's infrastructure presently has an ingrained familiarity with gas industry activities, this would be a plus for the region's job market. This section fails to point out that large quantities of steel and other requisite construction materials needed for U.S. Lake Erie natural gas resource development are already in place in the region and thus should

CSS-18 We agree that there are numerous sources of information including documents prepared by FERC, the American Gas Association, and the source used in cited Table 3-13. However, Table 3-13 was included only for the purpose of demonstrating that there are major industrial groups in the region that are gas-intensive, that they are sensitive to curtailments, and that the state of Ohio consumed more natural gas than New York and Pennsylvania combined (within the Reference Program study area). The McGraw-Hill (1978) reference serves the purpose for which it was intended.

CSS-19 See Response MCH-1.

CSS-20 The "reef-effect" referred to in the cited article occurs at permanent structures where sufficient time passes to allow colonization of the structures by organisms. The Reference Program drilling would involve only temporary residence times for a rig in any drilling location.

CSS-21 The DEIS discussed in some detail the importance of natural gas to the Lake Erie regional economy and in particular to the industrial sector (paragraph 1.009, 1.018, 3.125-3.137, 4.185, and 4.201). The development of a Lake Erie gas resource could help the regional economy. Projections relating to socioeconomic impacts are discussed in paragraphs 4.154-4.175. It is impossible to determine at this time whether operators would buy steel or other material locally or nationally. Due to the transportation costs of steel and steel products, however, it is reasonable to assume that most production material would be obtained within the region.

555-21 help the region's economy which is presently in a cyclical downturn phase. In sum, the economic productivity of region will be enhanced by the availability of this new energy source. These concepts must be included in any socioeconomic discussion.

Page 4-65. S. 4.190

135-27 This section should spell out in some detail the significance of this project on the current U.S. dependence on foreign oil and the unfavorable balance of payments deficit which the Nation is now experiencing.

Page D-9, S. D-035

Marcell gas liquids are a valuable and important source of hydrocarbons for many significant uses including less dependence on foreign sources. The liquids may be transported to shore in the gas pipeline. They are considerable experience (Gulf of Mexico and offshore gas fields) in handling the liquids and they pose little, if any, danger different from natural gas production, processing and transportation. The impacts of these liquids are substantially less than oil.

This proposed requirement should be eliminated as wasteful, inefficient and depriving the country and states of an important source of hydrocarbons and natural gas. Why such a requirement would be imposed is not discussed. In any case, such a requirement is irrational and wasteful of hydrocarbons and economic resources (see pages 1-21, 1-39 and A-9 to A-10 also).

Page D-11. S. D. 039

The first requirement for drilling fluids, completion fluids, spent acid and drill cuttings was probably imposed because of proposed hazardous waste regulations. However, these regulations do not include the hazardous wastes by the promulgated regulations (Subpart 261.10). The second requirement will be expensive and, in light of the regulations, treatment will be expensive. It should be limited to those wastes meeting the characteristics of a hazardous waste (Subpart C of 40 CFR 261). It is recommended that the regulations be revised to comply with USEPA's present hazardous waste regulations.

An analysis of U.S. dependence on foreign oil and the U.S. balance of payments is beyond the mandate of this DEIS.

Natural gas liquids consist mainly of the light hydrocarbons (propanes, butanes). These gases are highly volatile and will vaporize readily under atmospheric conditions. However, these liquids are in a liquid state under production conditions of much higher pressure. If they would enter the lake as liquid if a line should break while the well was producing, these liquids would cause problems when some of the liquid goes into solution as it migrates to the surface of the lake. Statement of position noted.

See Response C55-8. Because a particular waste is determined nonhazardous under the Resource Conservation and Recovery Act does not imply that the waste is suitable for discharge into a waterway. For example, phosphorus may not be toxic or hazardous, but the limitation of phosphorus for reasons other than toxicity has been identified as an objective for Lake Erie in the 1978 Water Quality Agreement. See topical Response Number 13 on Waste Disposal.

CS-79 In general, Columbia agrees with the general conclusion that the Corps has reached in its DPEIS—that development of Lake Erie energy resources will not significantly affect the environment and therefore is environmentally acceptable.

Examination of the Canadian experience in Lake Erie natural gas development indicates an serious pollution incidents since this program began in 1913. Given this history, the Canadian government has been forced to control regulations and the advanced technologies which have responded to new pollution control standards, we can believe that energy resources development in Lake Erie and its offshore areas will significantly affect the environment. In view of the historic record, however, this Development Program is, in our opinion, essential.

Tastes very craly.

Edw. S. Smith

66-557

A decision concerning the environmental acceptability of U.S. Lake Erie gas development in principle will not be made until after the Final EIS has been filed with USEPA headquarters and the mandatory 30-day administrative waiting period has expired.

See Topical Response Number 1 on the Canadian Experience.



2721 Commerce Drive
East, Ohio 43020
January 12, 1982

To: Hon. George F. Anderson, Executive Director, Ohio Department of Natural Resources
From: Edwin Shaw, National Resources Director
Re: Comments on Ohio's Environmental Impact Statement related to U.S. Lake Erie National Gas Resource Development

The League of Women Voters of Ohio believes that between now and the year 2000, while pursuing a long-term energy strategy, the U.S. should develop and use a mix of energy resources. The League of Women Voters of Ohio believes that the following are important:

- The priority must be given to conventional, renewable resources, especially solar, wind, and geothermal.
- Nuclear power should be developed in a safe and secure manner.
- Because of the environmental and safety risks, the environmentally sound use of coal, oil, and natural gas should be minimized.
- Because of the environmental and safety risks, the environmentally sound use of coal, oil, and natural gas should be minimized.

Specific to the year 2000, the U.S. should rely predominantly on renewable resources. The League of Women Voters of Ohio has long been concerned about drilling for oil and gas in Lake Erie. The League of Women Voters of Ohio believes that the following are important:

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LWV-1

Statement noted. The long-term energy strategies and policies and interim policies are essentially established by the President and Congress in the form of public laws, policy statements, and executive orders which authorize and/or direct the actions of the Executive Branch. The long-term energy strategy and policies are discussed in paragraph 1.010 to 1.015 of the DEIS. These policies essentially call for conservation efforts, fuel switching, greater reliance on more abundant fuels, and development of alternative energy sources. Most of the studies that were done in the early 2000s indicate that a transition period into the early 2000s is needed to replace current sources with many of those energy sources indicated in this comment.

LWV-2

See Topical Response Number 6 on Sediment Resuspension, Topical Response Number 9 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs. Development of all in Lake Erie is prohibited under the current case accident analysis of 1.010. The DEIS contains information on the likelihood of occurring. See also Topical Response Number 7 on Contingency Plans and Cleanups.

LWV-3

Statements noted. See Topical Response Number 9 on Water Supplies and Treatment Costs.

LWV-4

See Topical Response Number 7 on Contingency Plans and Cleanups, Topical Response Number 8 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs.

[illegible]

The extensive list of references does not include 1968 Report #13, Daniel Michael and Charles Anderson, "Activities and Environmental Impacts Related to the Development of Natural Gas and Oil in the U.S. western of Lake Erie," a significant milestone. The authors point out that some methane hydrates, it could contribute to seismic conditions before drilling is permitted.

[illegible][illegible][illegible][illegible]

See Response DGS-1 and HWS-3. The seismicity of the Lake Erie region is thoroughly discussed in the DEIS. Portions of the lake basin are located in several states.

The CLEAR report by Michalek and Herdendorf (1980) was reviewed by the USEPA, Corps, and Argonne National Laboratory. However, citing the report's conclusions with regard to the OESIS, The report discussed potential impacts of sediment resuspension, silt loading, methane, and oil. Although some of these same pollutants had related the potential to the reference program earlier, in other words, although the CLEAR report points out possible effects from other technologies used in the Reference Program to avoid or minimize potential inputs or the guidelines and prohibitions applicable to the Reference Program. Zampovsky and White (1980), Ferrante et al. (1980), and others, provided the necessary information to analyze the impacts from the Reference Program. The CLEAR report was reviewed by the USEPA, Corps, and Argonne National Laboratory. However, citing the report's conclusions with regard to the OESIS, The report discussed potential impacts of sediment resuspension, silt loading, methane, and oil. Although some of these same pollutants had related the potential to the reference program earlier, in other words, although the CLEAR report points out possible effects from other technologies used in the Reference Program to avoid or minimize potential inputs or the guidelines and prohibitions applicable to the Reference Program. Zampovsky and White (1980), Ferrante et al. (1980), and others, provided the necessary information to analyze the impacts from the Reference Program. The CLEAR report was reviewed by the USEPA, Corps, and Argonne National Laboratory. However, citing the report's conclusions with regard to the OESIS, The report discussed potential impacts of sediment resuspension, silt loading, methane, and oil. Although some of these same pollutants had related the potential to the reference program earlier, in other words, although the CLEAR report points out possible effects from other technologies used in the Reference Program to avoid or minimize potential inputs or the guidelines and prohibitions applicable to the Reference Program. Zampovsky and White (1980), Ferrante et al. (1980), and others, provided the necessary information to analyze the impacts from the Reference Program.

The commenters are noting that both the Federal regulations dealing with hazardous waste disposal (such as those promulgated under the Resource Conservation and Recovery Act) and the corresponding state regulatory strategy program (such as those promulgated under the Massachusetts hazardous waste strategy program) are likely to be compatible with the Federal and state level, available forms of such regulations at either the Federal or state level, availability of suitable waste disposal sites. As correctly noted in the comment, adequate financial support, trained personnel, and coordination with the Safe Drinking Water Act, as well as the availability of suitable waste disposal sites, are also prerequisites to the successful implementation of such programs.

Currently, the Commonwealth of Pennsylvania is the only state in the Reference program area that has a Coastal Zone Management (CZM) plan that has been approved under the Coastal Zone Management Act. CZM plans are required by the National Coastal Zone Management Act, which was passed by the U.S. Department of Commerce prior to issuance of Federal permits. The Corps of Engineers does coordinate its permit program with the states and one condition of obligating to the issuance of a Federal permit on the grounds of unacceptable impact to their coastal area even if the CZM plan has not yet been approved is that the applicant must also have Federal authorization. Additionally, the Corps of Engineers quality interest review during permit application processing includes consideration of impacts to wetlands and wildlife. The permit application process also includes consideration of impacts to historic and cultural resources, water quality, water supplies, recreation, and other Federal designations.

See "Optical Response Number 7 on Contingency Plans and Cleanups and Topical Response Number 9 on Water Supplies and Treatment Costs. Monties from royalties, not from mineral rights, since they run the mineral rights."

See Topical Response Number 12 on the Need for Natural Gas. The Federal Energy Regulatory Commission cannot at the present time predict the effects of the Natural Gas Policy Act in the long term.

11. CAR 1

21-0481

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PL 0409

53-6248

71-3441

Based on the Reference Program, the price of lake Erie natural gas is estimated at \$2.47/million Btu in 1980 (p. 4-66). A letter to me from E. J. Kinsac, Supervisor, Petroleum Resources Section, Ontario Ministry of Natural Resources (May 16, 1975), stated

Umfeld

Umfeld

13-00000

LWVO-14

57-0477

91-0440

Comment noted.

Self-help gas has been successful in many states of Ohio, but as indicated in Figure 2.10, it is extremely costly to the state compared to national programs. The reason for this is that the program was designed to address regional air demands. See Logical Response Number 11 on the On and Alternative Programs in regard to the costs of on and alternative programs. One of the major problems with the program is related to the need for proper techniques, restrictions, disposal methods, and inspections are incorporated. Additionally, some permit programs require that applicants provide the information needed to determine if they can meet the requirements of the permitting program requirements. Another important factor is that we do "not" enforce tight number of operating rigs, and this would also affect the cost.

See Topical Response Number 12 on the Need for Natural Gas.

Producers will not develop any Lake Erie gas unless it is economically feasible to do so. This means that the cost of production and the wellhead price of the gas must enable the producer to make a reasonable rate of return on his investment.

The ultimate destination of the gas—i.e., whether it will be produced on a self-help basis by a large industrial natural gas user or by a petroleum gas company and sold to local utilities—cannot be determined at this time. The importance of natural gas to many industries in the Lake Erie region is discussed in the NEIS (paragraph 1.018, 3.110-3.137, and 4.185).

01-QJN1

21-0481

51-045

41-0427

Edith Chase

UW-17

The Ohio League of Women Voters is correct that a full analysis of benefit and harm should take into account social costs not explicitly balanced against revenue in this DEIS (pages 108 to 113). However, without a full risk analysis, such costs are difficult to estimate as well as being subject to considerable uncertainty. The DEIS does not assume such costs to be small (pages 113 and 132, last paragraph). The extent of the financial analysis was limited to a determination of whether such costs might be profitable for industry operators (paragraph 5.006), and not whether they would be profitable for the State. The net social dollar value was positive or negative for all concerned.

It is possible that the Regulatory Task Force would develop its recommended minimum standards to be implemented through Federal and state regulations. In that case, the DEIS (pages 113 and 122, last paragraph) would be consistent with Executive Order 12291, would assess the costs and benefits of the proposed rule, and would identify where the costs and benefits would fall.

Additionally, see Topical Response Number 7 on Contingency Plans and Cleanups.

UNVO-18 Summary of specific comments above noted.

WVO-19 This Final EIS provides the requested summary of public views, comments, and concerns and the responses to these comments.



National Audubon Society

SHAWON ALDOUSCH CENTER ROUTE 4, SHAWON CONNECTICUT 06089
375-1600-1100

January 12, 1963

George P. Jackson
Colonel, Corps of Engineers
District Engineer
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Transmission: Respiratory Function Branch

Page 10 of 10

The Regional Office welcomes the opportunity to comment on the draft programmatic statement. Impact statement entitled "U.S. Lake Erie National Game Refuge Development."

In reviewing the draft EIS we were concerned with two areas: contingency plans for oil spills and the clearance of sediment with the potential for re-

15

The efficient contingency plan appears to be quite comprehensive with the proper legislation, regional, and state programs. We hope that the proposed legislation for the National C.I. and Veterans Submarine Contingency Plan will become finalized. The first C.I. is the first team Region 1 and Region 2. Veterans Contingency Plan may also have an impact on the National Response Team as well as the state C.I. and Maritime Submarine Contingency Programs.

being motivated and energized to address the projections being

The circumstances of occurrence and the subsequent reorganization of substances in many soils is difficult to grasp. Some soils is a complex body of their composition of liquids, sorptions, and weather conditions. The LVS converts the information that the distribution of substances would be minimal and the absorption that the distribution of heavy metals limited. As sincerely hope that this statement is accurate in view of the activity of the pig, tag, and large in Am 3 to 10 days that is needed to drill and complete the well, and during unloading and the laying of pipe.

123

was-:

Spill prevention measures are mandated by various existing federal and state statutes and regulations (see Appendix D). The Task Force may recommend new measures appropriate to the special environment of Lake Erie offshore drilling. Detailed discussion of site-specific measures would be contained in any studies associated with a specific permit application. See Topical Response Number 7 on Contingency Plans and Cleanups.

See Topical Response Number 6 on Sediment Resuspension.

2-SYN

AMERICAN COMMITTEE TO CONSERVATION

Consultants • Advisors • Scientists/Engineers • New York • Rhode Island • Vermont

2

1957-1958

Manuscript

W

How? When? How often?

Chief, Institute of Mineral Resources

New York State supports

2-Syn

For information on acid rain,

Great Lakes Regional Office
Environmental Policy Committee

LEBC-4

The intent of programs specified in Annex 12 "Persistent Toxic Substances" is to virtually eliminate the input of persistent toxic substances in order to protect human health and to insure continued health and productivity of living aquatic resources and man's use thereof. The philosophy adopted for control of inputs of persistent toxic substances shall be zero discharge.

The International Joint Commission has jurisdiction over boundary waters and Great Lakes pollution embodied in two treaties and special expertise in the management of boundary waters by its investigatory function. The signing November 22, 1978 of the Great Lakes Water Quality Agreement reaffirmed the U.S.-Canada determination to restore and enhance water quality in the Great Lakes System under the rights and obligations of both countries under the Boundary Waters Treaty of 1909 particularly the second part of Article IV of that Treaty which prohibits the pollution of boundary waters and water flowing across the boundary on either side to the injury of health or property on the other. The prohibition is absolute, contingent upon no additional circumstance to make it obligatory; the provision is therefore self-executing. The Treaty does not require a Canadian citizen to press any claims under Article II or Article IV before the IJC prior to bringing an action in a United States court. Under Article VI of the U.S. Constitution treaties are the supreme law of the land.

The Lake Erie Basin Committee has long respected the international jurisdictions in Great Lakes water quality decisions as important to the health and safety of citizens on both sides of the United States-Canada boundary and place the highest priority to preserve this irreplaceable water resource from further degradation.

Although there is a brief mention of the 1978 Water Quality Agreement in 4.017 it is not included in Appendix D Summary of Existing Rules and Regulations and proposed guidelines that may be used to define an Acceptable Offshore Natural Gas Development Program in the U.S. Waters of Lake Erie. Does this mean that the 1978 Water Quality Agreement objectives will not be used as a guideline for standards and required practices in the proposed program? The word may indicates in legal terms you may or may not. It shows uncertainty as to just what standards will be used. The Draft shows missing data for standards which leads to questioning if it is an environmentally safe program.

An environmental impact statement is supposed to focus on five issues: potential environmental impacts, unavoidable adverse impacts, irreversible impacts, short-term versus long-term resource use considerations and alternatives to the proposed action. This Draft is deficient in all of these areas particularly the unavoidable adverse impacts, irreversible impacts and short term versus long term resource use considerations.

The Lake Erie Basin Committee believes there is no need for the proposed gas development in Lake Erie. Most data used to evaluate the proposed reference programs are based on selected extrapolations of insufficient information.

Curtailments of gas during 1976-77 and 1977-78 winter periods were caused by distribution problems and lack of storage capacity. Changes in pricing policies and regulations released gas for public distribution and encouraged even more the extensive land drilling operations that had been increasing during the 70's. Fears of shortages and price escalations have encouraged industries, municipalities, institutions and school districts to drill their own wells. Over 100 industries in Ohio have taken advantage of this self help program.

LEBC-5

The DEIS included all five issues that are required by the Council on Environmental Quality regulations 40 CFR 1500-1508. Chapter Four addresses the environmental impacts of the proposed action and alternatives; the unavoidable adverse impacts; and the irreversible and irretrievable commitment of resources. Chapter Four also contains a discussion of the relationship between short-term uses of the environment and enhancement of long-term productivity, and a discussion of mitigation. Chapter Two is directed at all feasible alternatives to the Reference Program. The comment does not delineate where the deficiencies in the analysis lie and thus further response is not possible.

LEBC-6

Comment noted. See Topical Response Number 12 on the Need for Natural Gas.

LEBC-6	With this statement the LBC is submitting a most recent report by the American Gas Association entitled "The Gas Energy Supply Outlook: 1980-2000" dated October 1980. Its estimates of proven reserves indicates there is no need to risk our water supply.	
LEBC-7	Seismic information is incomplete. Enclosed is an earthquake hazard map which shows an error was made in the Lawler, Matukay and Shelly report to the NTS legislature. In comparing the maps it shows that a 4 was inserted where a 9 is in the original by the National Oceanic and Atmospheric Admin. This is a prime example of how misinformation is preserved in perpetuity. Over thirty earthquakes, of several origins and of relatively high intensity (MS-12), have been recorded as affecting northeastern United States and the Lake Erie basin. Canadian earthquake information shows an epicenter in Lake Erie off Presque Isle. There is a past history of activity in the Erie, Penn.	LEBC-7 The commenter is incorrect. The maps referred to are both correct; the value on the original referenced report shows a 4 as does the Lawler et al. map and the map submitted with this comment. The seismicity of this region is rather well-documented and is discussed in detail in paragraphs 1.053-1.056. (Note: the map provided in support of the comment is on file at the Buffalo District Office. The quality of the map did not allow for reproduction). See Response CEH-9.
LEBC-8	The proposed guidelines call for closed systems with zero discharge drilling muds and cuttings would go into the lake. Sediment is a primary concern because of its ability to bind phosphorus, heavy metals, pesticides and other organic compounds (such as PCB's). LIC PLUDAC has determined that these materials can become bound to clay size fraction of suspended solids (.42 u m particle size and move easily with water. These particles settle out very slowly when they reach the open lakes. Their large surface area and slow settling rate can expose the clay-particle associated pollutant to the lake water for an extended period of time. This may allow the pollutant to be released into the water column and become available for biological uptake. Contaminated sediment may be physically transported long distances before coming to a sink. With highly active contaminants, this factor will invalidate a sinking zone concept, since it may well result in virtual whole lake contamination.	LEBC-8 Impacts of drillship operations in Lake Erie are addressed adequately at the programmatic DEIS level. Site-specific impacts would be treated on a site-specific basis for natural gas development. See Topical Response Number 5 on Sediment Resuspension and Response DEC-14.
LEBC-8a		LEBC-8a The limited releases of gel and drill cuttings in the Reference Program will be localized and are not expected to cause significant changes in bottom contours or to change current patterns.
LEBC-8b		LEBC-8b Many compounds used in drilling deep Outer Continental Shelf (OCS) wells are not needed in drilling the comparatively shallow wells described in the Reference Program for Lake Erie. In addition, the only mud routinely discharged to the Lake in the Reference Program is one composed of water and bentonite, a clay. Any other muds are recycled and eventually disposed of onland. The impacts of accidental releases are summarized in Table 4-5.
LEBC-8c	Because of the viscosity of drilling muds they can spread through the lake bottom killing benthic organisms. Drill cuttings smother bottom life and can change bottom contours. Could changes in bottom contours eventually change current and drift patterns? What is the effect of recycling phosphorus from the sediments from disturbance by the development? The impacts of a drill ship operations in Lake Erie have not been fully addressed. At the present time there is considerable controversy with the OCS operations concerning the possible effects of drilling muds on marine life. Taking into consideration that this issue has not been resolved for OCS operations in the Georges Bank, how can the Army Corps of Engineers and EPA Region V determine that it will be environmentally safe in drinking water supplies or have no effect on aquatic life in Lake Erie? These contaminants are accumulative and represent greater risk in smaller water bodies. (Telephone contact with USEPA Wash.)	LEBC-8c Significant health risks are not identified. See Topical Response Number 6 on Sediment Resuspension, Topical Response Number 8 on Glycol Chlorination, and Topical Response Number 9 on Water Supplies and Treatment Costs.
LEBC-8c	The Draft does not provide information about health risks associated with exposure to the public of heavy metals, organics and new toxics being introduced into the lake environment. Even trace amounts of contaminants added to the existing ones could have a synergistic effect more toxic than the original. There is not enough data about bioconcentration of toxics either by ingestion of the lake water or the food chain.	

LEBC-8d Statement of opinion noted.

LEBC-9e The site-specific nature of effects resulting from contaminant releases during the drilling program was taken into account in preparation of the DEIS. The approach used in addressing water quality issues, for instance, was to make worst-case assumptions concerning parameters such as current speed and direction and contaminant concentrations in order to estimate highest anticipated water column concentrations. The study referred to was designed to provide background data rather than serve as a comprehensive impact assessment.

LEBC-8f See Topical Response Number 9 on Water Supplies and Treatment Costs.

LEBC-9 See Response CCD-4.

LEBC-10 See Response UFF-7 and GLL-4.

LEBC-8d If a Task Force will be responsible for ultimately defining a minimum set of federal standards to guide offshore development activities then the so called reference program is uncertain. The identity and importance of many hazardous substances are not known; establishing such data must precede a control program. The standards that will be developed could change the risks and cost/benefit analysis.

LEBC-9e The location of the tests conducted by the Argonne National Lab. of the drilling setup and process by Canadian drillers is suspect because of its location. Currents are different and sediments are heavily polluted on the U.S. side of Lake Erie so data is insufficient to judge parameters for the reference program. The original drilling regulations proposed for Lake Erie by the old MTS Conservation Dept. in 1968 gave a distance of 1/2 mile from water intakes. The reference program proposes the same distance no improvement on safety from 12 years ago.

LEBC-8f Water supply cost issues have been omitted with the assumption that there will be few accidents and/or problems occurring from routine activities. This is unrealistic because industry officials have always always come unlearned to us that guarantees of no accidents cannot be given. The New York State Health Dept. published a recent report "Organic Chemicals and Drinking Water" March 1980 which has some preliminary figures on Cost Assessments of Control Techniques for water filtration plants. The Draft neglected the cost of finding a replacement of our water supply or repairs and adjustments to present systems. The water facilities could be impacted either collectively from a large oil spill or singly from a smaller accident. Oil ruins sand filters in water filtration plants. Turbidity causes wear and interferes with disinfection. Salt would have to be taken out with desalination equipment which prevent water facilities do not have. How costly will it be to water supply facilities from potential damage from contaminants, oil salt? Our water supply is the long-term resource use of Lake Erie's waters and of prime importance since groundwater resources of quantity and quality are not sufficient for the population in the basin. Accident response plans are inadequate. There is no joint contingency plan for spills. Money to cleanup spills from drilling accidents was deleted from the Superfund bill recently passed by Congress and signed by the President. Local governments along the lake would have to be equipped and trained to clean-up. Who pays these extra costs? Local property owners are still trying to collect damages from the oil spill in Lake Ontario caused by human negligence several years ago.

LEBC-9e The information about blow-out-preventers is misleading. 25% to 40% of these valves failed to function properly in the Gulf in 1970 and 1971. On floating rigs BOP's located on the lake bottom are hydraulically activated and are controlled from the ship. In deep water the time required to activate the preventers from the surface may pose a problem and some new floating rigs are being equipped with electronically activated systems in order to achieve a shorter response time. Whether hydraulically or electronically controlled BOP's are activated manually not automatically. Safety therefore depends on the capabilities of the operators.

LEBC-10 For both drilling and production, a large amount of equipment has to be mounted on a very compact platform; and this compactness contributes to many problems which occur on platforms. Although safety has not been neglected, overall safety systems such as gas and flame detectors, fire containment design, fire control equipment and rapid escape systems for personnel, have been identified as areas requiring additional attention on Gulf operations. What caused the fire on the "Mr. Miel" last summer? How extensive was the damage? Has the "Mr. Miel" seen service since that fire? What happened to supplies on board? Impact from fires has not been addressed in the Draft.

- LEBC-11 heavy metals are allowed in corrosion protection devices (sacrificial anodes), and it is estimated that significant quantities of mercury, for example, are discharged each year from anodes that are predominantly aluminum. Is this a possible source of mercury? Can there be possible contamination caused by PCB's from heat exchangers on the rigs?
- LEBC-12 Production activities are continuous and require hardware installed for the life of the field. Production problems occur, however and sometimes the well bore has to be re-milled for various workover or servicing functions. Information is inadequate considering that the entire well field would have to be continually serviced. Sometimes a rig has to be set up.
- LEBC-13 Impacts from pipe-laying operations in the lake bottom have not been adequately addressed. What type of burial barge would be used in the Lake? A burial barge is used to sink the pipe beneath the surface, usually by displacing sediments with a high pressure jet. Were tests done during a pipe-laying operation to determine sediment disturbance? Effects on aquatic life? dispersion? turbidity? What are true costs of laying pipelines in deep areas of the lake? What are the problems with steep slopes?
- LEBC-14 Remedial measures to mitigate erosion problems where pipelines would come ashore is an interesting inconsistency in this Draft. Placemall remedial measures haven't worked on Lake Ontario or on the South shore of Lake Erie. Remedial measures are a much more complex problem than the Draft addresses. If it is so minor a problem, why is a study funded by the taxpayer's money being carried on by the Army Corps of Engineers of Lake Ontario's shore erosion problems?
- LEBC-15 Quantities for the Reference Program were modeled from the "Mr. Neil" the smallest jack-up rig in operation in Canadian waters so are not necessarily representative of actual future developments in Lake Erie. Costs are based on this same questionable data. Larger rigs such as the Timesaver II have six legs instead of four.
- LEBC-16 There are conflicts with the CZM Program geographic areas of particular concern that were determined by many hours of participation by local citizens in the planning process.
- LEBC-17 Mr. Robert Flack, MDCOC has announced there will be no new hazardous waste facilities in Niagara or Erie Counties. Where will wastes from the drilling program be put?
- LEBC-18 There are conflicts with the Erie-Niagara Air Implementation plan. Most of the areas of non-attainment are on the shore (Lackawanna or unclassified as the waterfront. How far do these non-attainment areas extend into the Lake?
- LEBC-19 Data on harbor facilities and navigation impacts are insufficient. A study to integrate the results of cargo transportation plans and studies for highways, railroads and water borne shipping in the Great Lakes Region is being undertaken by the Great Lakes Basin Commission.
- LEBC-20 With energy costs rising, highways deteriorating railroads deregulated and ports facing shifts in shipping patterns, the Commission will consider a range of options for dealing with these and other regional transportation.
- LEBC-21 The key to success for all programs which have to control effluents and operations that can impact water quality are rules and regulations that are enforced by well trained officials. Cuts in the budget for personnel to monitor environmental programs have been constant. New York State does not have a proper monitoring program for Lake Erie and the Niagara River.
- LEBC-11 In most cases, mercury is not included in any corrosion protection device such as sacrificial anodes. Additionally, drilling rigs do not have heat exchangers.
- LEBC-12 For this type of gas well, it is doubtful that these wells would need servicing more than once in the lifetime of the well. If necessary, however, it would more than likely be a remedial stimulation that would not require a rig, and all returns would be produced into the pipeline. Therefore, impacts would be negligible.
- LEBC-13 Impacts resulting from pipe-laying operations from any type of barge are discussed adequately. Additionally, the true costs of laying pipelines in deep areas of the Lake will be similar to the costs specified in the DEIS.
- LEBC-14 Measures to mitigate erosion damage at a single point in a specific situation may be inappropriate or ineffective on a lakewide basis. The comparison implied in this comment is invalid.
- LEBC-15 The Reference Program jack-up drilling rig is a state-of-the-art design, and it is an excellent representation of what would actually be used. Since the construction of the Timesaver II, it has been found that a four-legged jack-up is a much better design because it presents a smaller surface area to any wave-generated forces.
- LEBC-16 The Reference Program described in the DEIS is to be implemented in full compatibility with state and local land-use law, including applicable coastal zone management (CZM) programs. At this time, no sites have been selected for any operations, and so it is difficult to see how any conflicts with CZM programs could already have arisen.
- LEBC-17 See Response EPA-4.
- LEBC-18 The staff is not aware of definite conflicts with air quality implementation plans. If such conflicts should arise in site-specific environmental impact assessments, the appropriate new source permitting authority should be contacted in regard to the need to apply for emission offsets. Nonattainment areas do not extend over Lake Erie.
- LEBC-19 The maximum number of vessels committed to the Reference Program includes eight drilling rigs, three stimulation barges, three pipe barges, eight service vessels, and three tow tugs. Minimal impact on Lake Erie port facilities and navigation can be expected from this level of increased activity. Sufficient data are presented in the DEIS to support this assessment (paragraphs 3.074-3.075 and 4.062-4.069).
- LEBC-20 Comment noted.
- LEBC-21 Statement of opinion noted.

LEEC-21: The credibility of the EPRC is in question since the importance of the last three years with the Lake Erie and the hydrology of the Lake Erie basin. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past.

LEEC-22: The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past.

LEEC-23: The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past.

LEEC-24: The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past.

LEEC-25: The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past.

LEEC-26: The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past. The EPRC has been criticized for its lack of credibility and for its lack of credibility in the past.

PLANNING BOARD GROUP
LAKE ERIE BASIN DEVELOPMENT

LEEC-22 Statement of opinion noted.

LEEC-23 The issues raised in the comment regarding the estimation of U.S. Lake Erie gas production has been considered by staff in projecting the amount of gas produced from the development program. The assumptions used in estimating the production are well documented in the DEIS.

The economic results of U.S. Lake Erie gas development calculated in terms of net present value (NPV) and return on investment (ROI) are based on specific assumptions. These assumptions are based on the current market conditions for gas, oil, and price increases. These assumptions can be very easily altered and results recalculated. In the current analysis, positive NPVs and rates of ROI in the range of \$41 million to \$890 million and 17% to 120% respectively have been calculated. The rate of gas production from the base case may result in the range of 23 to 120%. An operator with limited investment capital, guided by his profit maximizing motive, would direct his resources to the project offering his best return. The operator would first allocate his limited resources to the onshore gas development. The operator would then allocate his resources to the offshore gas development. The operator would then allocate his resources to the offshore gas development. The operator would then allocate his resources to the offshore gas development. The operator would then allocate his resources to the offshore gas development.

In the staff's opinion, the assumptions used to derive the results are quite conservative (e.g., the increase in the price of gas and the life of gas producing wells). A rate of ROI in the range of 17 to 120% would not be considered as marginal.

Position noted.

LEEC-24 The DEIS Reference Program is for natural gas development. Reference Program activity includes including activities that would require additional treatment facilities or chemicals are not identified.

Position noted.

TELEPHONE OR VERBAL CONVERSATION RECORD		DATE
For use of this form, see all instructions on the adjacent cover sheet's back.		19 Jan 81
SUBJECT OF CONVERSATION		
Comments on Draft EIS: Lake Erie Gas Development Study		
PERSON CALLING	PERSON CALLED	PHONE NUMBER AND EXTENSION
Fran Arcara	League of Women Voters, Lake Erie Basin Committee	
PERSON CALLED	PHONE NUMBER AND EXTENSION	
Joe Macale	NOBOD-5	
PERSON CALLING	PERSON CALLED	PHONE NUMBER AND EXTENSION
SUMMARY OF CONVERSATION		
<p>LEBC-27</p> <p>Mrs. Arcara advised of the following typographical errors in her letter of comment:</p> <p>page 2, line 19 : change " both polar and lipid soluble." to " both polar and lipid soluble groups."</p> <p>page 2, first line, para. at bottom of page: intranational to international.</p> <p>page 3, second to last para, last line: change " in the Erie, Penn." to " in the Erie, Penn. area."</p> <p>page 4, third line up from bottom of page: desalination to desalination.</p> <p>page 5, third full para from the top: change Mr. Niet to Mr. Neil in two lines.</p>		

LEBC-27 Corrections to commenter's letter noted.

DA FORM 751
REPLACES EDITION OF 1 FEB 68 WHICH WILL BE USED.

Don Koshman
437 Scarsdale Ave
Binghola, N.Y. 14004
Feb. 9, 1967:

MR. UNITED STATES SECRETARY OF LABOR ASKS FOR THE DEVELOPMENT OF NATURAL GAS

This statement is for the public meeting of Feb. 11, 1961

[illegible]

3, also, went to bring to the concerned agencies attention the article that appeared in the METROAL EVENING NEWS on Sunday, Feb. 3, 1961. One "THE NIGHT FOR WATER GONG" by John Ogle; the other article "THE GREAT LAKES A MENACE THAT MIGHT BE MASTERED" by Paul Mac Clements.

Page 10

copy to: **Senator Daniel Rostenkowski**
Representative Jack Kemp
U.S. Environmental Protection Agency, Region 4
New York State Environmental Commissioner, Robert Placks
Superior Skills Club, Town of Oriskany
Maria Richardson, R.C.L. Dist. 4

UK-1 Statement of position noted. See Topical Response Number 12 on the Need for Natural Gas and Topical Response Number 9 on Water Supplies and Treatment Costs.

THIS IS A REVISED VERSION OF THE ORIGINAL LETTER OF COMMENT FROM THE ECONOMIC. THE ORIGINAL LETTER DID NOT MENTION WELL-BORED INDUSTRIAL THIS REVISED VERSION. IS A VERBATIM COPY. OF COMMENT IS ON FILE IN THE OFFICE OF THE ATTORNEY GENERAL.

COMMENTS CONCERNING:

BLAUF INDUSTRIAL ENVIRONMENTAL IMPACT

STATEMENT: U.S. LAKE ERIE NATURAL GAS RESERVE DEVELOPMENT

REMARKS:

U.S. EPA

Comments: I am a resident of Lake Erie and have been a member of the Lake Erie Natural Gas Reserve Development Committee since its inception in 1980. I have been a vocal proponent of the development of the reserve and the construction of a pipeline to transport the gas to the Lake Erie region.

TH-1

I am a resident of Lake Erie and have been a member of the Lake Erie Natural Gas Reserve Development Committee since its inception in 1980. I have been a vocal proponent of the development of the reserve and the construction of a pipeline to transport the gas to the Lake Erie region.

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TH-2

I am a resident of Lake Erie and have been a member of the Lake Erie Natural Gas Reserve Development Committee since its inception in 1980. I have been a vocal proponent of the development of the reserve and the construction of a pipeline to transport the gas to the Lake Erie region.

U.S. EPA

Comments: I am a resident of Lake Erie and have been a member of the Lake Erie Natural Gas Reserve Development Committee since its inception in 1980. I have been a vocal proponent of the development of the reserve and the construction of a pipeline to transport the gas to the Lake Erie region.

TH-3

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TH-4

I am a resident of Lake Erie and have been a member of the Lake Erie Natural Gas Reserve Development Committee since its inception in 1980. I have been a vocal proponent of the development of the reserve and the construction of a pipeline to transport the gas to the Lake Erie region.

TH-1

See Topical Response Number 12 on the Need for Natural Gas and paragraphs 1.010 to 1.016 of the DEIS, which provide reasons for the implementation of the Natural Gas Reserve Development Program. The reasons are, primarily, to conserve this nation's energy, reduce dependency on other nations, and thus reduce the balance-of-trade deficit.

TH-2

See Topical Response Number 12 on the Need for Natural Gas. The past curtailments were not used to justify gas development in Lake Erie. They were given as a historical reference to show that the need for gas has existed for many years by the three states. The purpose of this DEIS is to determine the environmental effects of gas development under a program that results in the smallest possible release of materials to the environment; it is not a document intended to justify any action in the Lake.

TH-3

The DEIS is an information document. Its purpose is to provide decision-makers, including the public, with the information needed to make informed choices in the context of a proposed governmental action. The DEIS is intended to provide this information early in the decision-making process, before meaningful alternatives are developed. The DEIS is not a regulatory document. It does not set standards, is internal and direct. Actual requirements are set forth in the various permits and leases that will be required. See Topical Response Number 3 on the Lake Erie and Federal Regulatory Authority and Topical Response Number 10 on the Reference Program Concept.

TH-4

The importance of natural gas to many major industries in the Lake Erie region was discussed in the DEIS (paragraphs 1.018, 3.130-3.137, and 4.180). Energy (natural gas) is an important factor for many industries. The development of this resource could be an important factor in maintaining and attracting industries to this region.

f.) Certainly, low-SFU, medium SFU, and high-SFU, coal qualifications should be given a great deal of attention since coal is in abundant supply in Ohio, and Pennsylvania. Coal is vital to the lives of millions of people in these states, particularly to the miners who make their living directly from this resource.

Also, conservation measures must consciously be brought to the attention of the public as well as the many businesses who rely on gas.

These particular sections bring up an acute problem which this regime (and the nation in general) already faces, worse, perhaps. Although it appears in 1913 that the problem could be handled, this is based on the use of current treatment facilities. Will the current facilities be able to handle the additional problems presented by this numerous development?

The Draft EIS is quite informative and presents clearly most information concerning the development of the natural gas resources in Lake Urmia. I hope that prior to the Final EIS, that some of the questions I have raised are answered.

The most important thing to keep in mind is, do we really need resource development of this type in this region? Remembering the declining population, as well as industry—containing problems, I feel it would be an unwise decision at this time.

8-44

These coal gasification options are discussed in greater detail in paragraphs 2.247 to 2.056. They are expected to play a role in the long-term national energy supplies. The American Gas Association (1980) report estimates an annual production of about 1.5 to 3.5 trillion cubic feet of coal gas by the year 2000.

See Response EPA-4.

3-205

70 • Draft Programme for Environmental Impact Statement
U.S.-India Airs Nuclear Gas Resources Development.

I am *Arthur J. McManis*, former member of the *Little Rock Committee* of the *Lange of Miami*. On this occasion, I have also consulted with the members of the *Northwest* "General Council," in the absence of *Dr. Hugh Davidson*, who has attended previous meetings.

The large bore for study of the thin skin like Br's was considered dead for many months, especially the central basin which was not developed and is not to be drilled. Through years after intensive study, he has developed the opinion, that the first priority for the use of Lake Br is for drinking water for the millions of people living on the shores, anything that is a risk to this quality must be "tamed" with considerable expense. He also pointed out that the water in the lake is still drilling in the south, in spite with the state of Mississippi that is still contaminated. He said that the water in the lake must be preserved. All of our mistakes are still repeated.

[illegible]

Other hazardous situations are also questionable. I thought that any contribution in the form of a mile may be at least a mile from any water intake. If the contribution is the one in the 225

4-11736

Paragraph 3.04, provided a nisonic amount of changes that occurred in the Central and western basin benthic communities as a result of increased organic input. The 1980 International Joint Commission report on Great Lakes water quality (page 11 of Appendix) also indicate that recent improvements have resulted in the absence of the burrowing mysid *Heptagenia imbecilis* at the mouth of the Detroit River. A significant improvement of the benthic macroinvertebrate downward-sloping programs to 'list the input of phosphorus still further and to reduce the input of organics and contaminants should lead to still more improvements.

Statement of opinion is noted. Operators would be required to obtain Corps of Engineers permits prior to any gas development in U.S. Lake Erie. The permit review process includes notification to the public of any proposal by public notice and includes provisions for public hearings.

See Response DOS-1. Also refer to paragraph 4,072 and Table 4-8.

THE UNIVERSITY OF CHICAGO

2

[illegible]

I remember seeing gas flares at the corners of the Bremer fields in this section of the country. I don't see the gas now either. But at this time you may mail me a note telling me all the gas fields in this section. I am sure you know them too easily. There are no gas fields here for a while. I am sure you know them in the west. But from what I read in the morning papers, I estimate that the young ladies and ladies working hard the night last.

Class The trend of projects being ^{fall} accepted before they are presented to the public seems to be growing. We would support any effort toward more attention and giving of more information to the public in order to help democracy over way of living.

Eastwicks Station

9-57126

The economics provided are conservative. See Technical Response Number 9 on Water Supplies and Potential Policy Act requirements. The staff agrees that there are many possibilities of cost savings that have not been considered in the analyses. However, they are very conservative and are believed to be reasonable. The staff also agrees that the rate of cost escalation for the reference calculation for Ohio are very reasonable and conservative. However, the staff agrees that the results of the economic analysis must keep in mind that the economic results of the analysis are based on the assumptions used. It is possible that any alteration in the assumptions will change the results.

The staff agrees that demand growth for energy in the United States has decreased. "The demand for energy is per the energy forecasting model developed by DOE. The natural gas demand in the Middle Atlantic region (which includes Pennsylvania, Indiana, Ohio, and West Virginia) and the East of the Appalachian region (which includes Ohio, Indiana, West Virginia) will grow at the rate of 1.03 and 0.7% respectively, from 1985 to 1990. They also forecast the amount of natural gas imported to be 3.5 Tcf in 1990. Lake Erie gas may be utilized to replace a portion of the imported gas, resulting in less dependence on the outside energy resources.

see Topical Response Number 7 on Contingency Plans and Cleanups. It is not clear what question is being asked. If the question is, "How can we ensure that cleanup funds are made available to assure that environmental and ecological commitments are in fact met?" then this DEIS details several mechanisms to ensure availability of funds. These include: (1) development of accident contingency plans, and (2) inclusion in lease contracts of provisions to insure financial responsibility, e.g., bonding of the operator of the facility.

undoubtedly, some commitment by government is implicit in any program that extends into the future. The Reference program contemplates a firm commitment by governmental entities to provide the necessary ongoing funding to support carrying out their responsibilities under the program. It is a truism, however, that availability of government funds in the future to meet government commitments made in the past is subject to the political process and is never absolutely secure.

See Topical Response Number 6 on Sediment Resuspension and Topical Response Number 12 on the Need for Natural Gas.

Currently, no proposals to develop U.S. Lake Erie natural gas have been submitted to the Corps of Engineers. The Corps permit process includes provisions for notification to the public of proposals and provisions for public hearings.

NC14-7

6-1538

true conservation is the wise use of our natural resources



Underwater Gas Developers

1981-02-11

1981-02-11

Department of the Army
Berkeley District, Corps of Engineers
174 Rogers Street
Berkeley, New York 10027

DEPT. OF THE ARMY, BERKELEY DISTRICT, CORPS OF ENGINEERS

ENTITLED: "U.S. LAKE ERIE NATURAL GAS SOURCE DEVELOPMENT"
I wish to submit for your consideration the following comments
to the U.S. Lake Erie Natural Gas Source Development.

On page D-11 Section 5.029 subsection 2 and elsewhere it is proposed
that all drill cuttings be barge hauled. These cuttings as described
in the proposal will be barge hauled and will be disposed of in the
water. I believe that no adverse effects will result. I believe you
should reconsider this proposal and allow the cuttings to be returned
to the lake.

All legitimate drilling programs identify that all drilling fluid be contained
in the well. If the drilling fluid is not contained in the well, it will
be pumped to the surface and will be disposed of in the water. The best way to do this is to pick
up the drilling fluid, pump it to the surface and dispose of it in the water.
I believe that this is the best way to do this and that the system to be used and
will not contribute to the cost of drilling.

It is proposed that excess cement be collected and returned to shore. The
amount is very small as shown on page 1-41 table 1-29. I would like you
to consider whether this amount of cement would have any adverse effect
on the lake.

It is proposed that auxiliary and domestic water be transported to shore.
This could be treated with an onboard approved sewage treatment system.

On page 1-47 Section 1.096 a barge stationed alongside the rig is referred
to as being in the open waters of Lake Erie. It is not safe to allow a barge to
remain beside a jack up rig or floating drill barge for the purpose of
transporting material. It is recommended that a barge be used for the
purpose of the drill rig or drill barge.

On page 1-46 table 1-41 Item 2-2.3 a caution is recommended for Jack up
rigs. In most cases I can not reason why the bottom of the wellhead
should be damaged. The damage to the wellhead and wellbore should be limited
to the damage to the wellhead and wellbore.

See Responses EPA-2 and DEC-14.

The barge would be stationed alongside the rig in an environmentally safe
position.

The recommendation is for a caisson; this item should not be considered as it is
much safer to place the wellhead in a caisson.

Section 2-2.4 recommends that systems that systems be set such that wells are drilled with a full air platform. Systems such as an air drill system would accommodate existing programs. However, a much smaller drive pipe would accommodate existing programs. However, it is uncertain the need of any drive pipe. If a closed system is an electrical system, the need of any drive pipe. If a closed system is an electrical system, the need of any drive pipe. If a closed system is an electrical system, the need of any drive pipe.

! that this requiring drive size does not give you the protection you are seeking for.

These water/CaCl₂ solutions is suggested to minimize dissolution of salt minerals. In many cases of the lake no salt zones are present. In this case there is no reason to use CaCl₂ in the drilling fluid or to later convert the solution to methanol.

This advice comments regarding the CaCl_2 and systems apply to the entire WRO commonwealth table 1-27 Section 2.

If a procedure does no damage or creates no evidence to unnecessary risk, it should not be prohibited. Any restriction should be carefully considered before it is made a recommendation or requirement. Costs of operating in a secure environment are very high. It could be very easy to put in place a set of regulation that create needless restriction and make the cost of recovering from fire gas impractical.

I have been leveling in anyway got drilling in Lake Erie for twelve years and now these comments only with the intention of assisting you in arrival of Lake. Practical regulations for the development of Lake Erie.

P. E. Brook

U. S. District
Court, Eastern District
of New York

Drive pipe size is variable. A 16-inch drive pipe will work just as well as several other sizes, and it serves the purpose intended by the Reference Program. This also applies to the comments about drill bits. See Topical Response Number 10 in the Reference Program Concept.

Comment no -ed.

Statement of opinion noted.

Comment PM-1

"Any formation water accompanying produced gas to shore in pipelines will be collected and reinjected into suitable onland subsurface formations." (Draft EIS paragraph S.013).

Bear in mind that we are presently under the "Interim Primary Drinking Water Standards" and that final standards have yet to be promulgated. Much research and pondering is being done and one area under very careful scrutiny is what is called "Underground Injection of Waste Materials." So many potable water wells have been contaminated that the Federal EPA feels that a very close look must be given to this area. But we don't know what rules they will come up with.

PM-1

The National Interim Primary Drinking Water Standards promulgated under Section 1412 of the Safe Drinking Water Act establish "maximum contaminant level (MCLs)" which specify the maximum permissible level of a contaminant in water that may be delivered to a user of a public water system. MCLs, where they exist, control toxic chemicals in finished drinking water, and are established based on consideration of a range of factors including not only health effects but also technological and economic feasibility of removing the contaminants from the supply. The drinking water standards thus apply to the point at which the water is delivered to the user rather than at the point of contaminant generation. Under Section 1412(a)(2) of the Safe Drinking Water Act, the Interim Primary Drinking Water Standards are required to protect health to the maximum extent feasible using treatment methods that are generally available (taking costs into consideration).

The Safe Drinking Water Act also required that the U.S. Environmental Protection Agency (USEPA) develop minimum requirements for state programs to protect underground drinking water sources from endangerment by the subsurface emplacement of fluids through well injection (Section 1421 of the Act). Such regulations were established in the Consolidated Permit Regulations (May 19, 1980). The USEPA also promulgated Final Rules on June 24, 1980, establishing the technical criteria and standards for use by states and USEPA in development and implementation of state Underground Injection Control (UIC) programs. The UIC programs are intended to protect groundwater from well injection operations. Table 1-10 of the DEIS assumed that the reinjection of formation water would be governed by the UIC programs. In paragraph 4.009 of the DEIS, it is stated that with proper development of injection wells and selection of suitable host formations for formation waters, the risk of contamination would be low. Further information on the reinjection of formation waters is contained in paragraphs 1.126 to 1.131 and Table 1-33 of the DEIS. The uses of regional groundwater resources are described in paragraphs 3.006 to 3.026 of the DEIS.

Comment PM-2

"Polyethylene glycols—(released during an accident)—would not substantially impact water quality directly, although chlorination of these compounds in a potable water intake is a potential source of impact. The carcinogenicity (cancer causing potential) and/or toxicity of the reaction between polyethylene glycols and aqueous chlorine is presently unknown." (Draft EIS paragraph S.018).

This is an interesting statement. The effect of 100 ppb. of tri-halo- methanes is not known either as far as its ability to cause cancer in drinking water, but it has been added as a Maximum Contaminant Level to the Drinking Water Standards. This statement must have caused some concern to others also. On 1/4/81 at 6:30 P.M. - Channel 4 T.V., a program called "Confrontation" was aired on the subject which included a president of a drilling company as well as Dr. Sweeney of the Great Lakes Laboratories and a member of the IJC. The drilling man was remarkably uninformed that polyethylene glycols would be used as a lubricant. He claimed that methyl hydrate would be used. I took notes and after the program embarked on a literature search to find out what a simple sounding compound like methyl hydrate was. The best that could be determined from my library and also my son's more modern graduate school library was that this is some sort of a new word for methyl alcohol or common 'wood alcohol.' Now there is no question whatever that if this material showed up at our intake that cancer-causing tri-halomethanes would be formed in our drinking water!

PM-2

Refer to Topical Response Number 8 on Glycol Chlorination for information concerning the chlorination of polyethylene glycol. Polyethylene glycol is used in the Reference Program to prevent hydrate formation (water-hydrocarbon ice crystals) during the winter months. Hydrate formation at the wellhead can decrease the production of natural gas, and the use of polyethylene glycol allows for greater gas production (DEIS, paragraph 1.100). The glycol acts as an antifreeze solution to depress the temperature at which crystals form to below the anticipated ambient conditions. Alcohols also have the ability to act in the same manner as glycols in depressing the temperature at which crystals form. As indicated in this comment, methyl hydrate is a hydrated methyl group or methyl alcohol and could be used in the control of hydrate formation. However, in the Reference Program for U.S. Lake Erie natural gas resource development, only polyethylene glycol has been considered for use in the control of hydrate formation. Any proposals to use methyl alcohol (methanol) would require further assessment of its effects on water quality, aquatic organisms, water supplies, and human health.

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This is interesting in view of the fact that hydrogen sulfide is about as poisonous as hydrogen cyanide which is used in the gas chamber for execution. "Amusing small" is not a good choice of words.

●

"Usually the city's recent experience with the 'mad' Lake Erie Steamer - demonstrating how simply a boat of this size can go out and repeat one of those underwater events."

In addressing worst-case impacts from accidents, the DEIS has taken into consideration the difficulty in repairing structures under water during ice seasons. In the event of a pipeline break, severe meteorological conditions (such as nearshore ice buildup) could prevent access to the break. Repair under these conditions would be extremely difficult and costly. In the event of a break in a non-underwater structure in Canadian waters has been performed during periods of severe weather, the pipeline would not be repaired until the breaking of a seasonally set back in ice would be to an operator's economic advantage to ensure that the pipeline is repaired to prevent the loss of natural gas.

Procedures to be followed by an operator in the event of a pipeline break under adverse meteorological conditions are times that would be included in accidents, contingency and prevention plans that are recommended in the DEIS (paragraph 1.084). Various accident and prevention plans that are applicable to U.S. Lake Erie natural gas development (paragraphs 1.076 to 1.084) would not apply to nonpolluting events such as the Citrac rescue. The contingency plans would make available personnel and equipment to deal with accidents that are not always available in the case of nonpolluting events. See the Optical Response Number of Contingency Plans and Changes.

Comment Page 2

PM-7

Drilling for gas in U.S. Lake Erie could have cumulative effects and these effects should be analyzed.

In assessing cumulative impacts, it is necessary to view past, present, and reasonably foreseeable future actions with impacts on the environment and the nature of the proposed action. In regard to cumulative impacts, the nature of the DEIS of surface water resources is not direct, but indirect, toward the assessment of individual drilling operations or the development of a gas reserve. The DEIS rather addresses total development of U.S. Lake Erie gas resources offshore or onshore. The DEIS does not address the cumulative impacts of the DEIS is the time for total development to occur. The resultant impacts considered in the DEIS, therefore, represent the impact of total development of, in the DEIS, the expected quantity of anticipated drilling operations. The DEIS outlined the expected quantity of anticipated drilling operations over the period of development and the impact of total development on water quality and water use, aquatic habitat, land use, etc.

Chapter Three of the DEIS recognizes the impact on the environment of past actions through measurement of the ambient conditions (to the extent possible on a programmatic level). For example, the impact of past discharges to the water and air in the region. The current and historic water quality of the water in Lake Erie are discussed in Appendix E of the DEIS. The information in Chapter Three was utilized in making the assessment of impacts associated with gas development. Chapter Three provided information on ambient conditions to which the impacts associated with gas development are added. More definition on ambient conditions and the impact of a particular discharge can only be determined during the review of a specific proposal at a specific location. This definition is provided in the DEIS. The DEIS also provides various permits such as those required under the Nation of Significant Quality Deterioration regulations, National Pollutant Discharge Elimination System Regulations, National Ambient Air Quality Standards, Section 404 of the Clean Water Act, and so on.

The DEIS also presented information on the projects that are reasonably foreseeable in the future such as an electric cable crossing of Lake Erie, a steel mill complex, and a steel mill. The DEIS also presented information on the projects that are reasonably foreseeable in the future which will be required to meet the appropriate water quality and air quality standards. The Reference Program, which is essentially a zero discharge program (no discharges to Lake Erie), would have little impact on water quality and would be a significant improvement over the current conditions present, and reasonably foreseeable actions. The total amount of habitat destruction associated with gas development is low (paragraph 4.032), and the cumulative impact of discharges on aquatic biota and water quality is expected to be minimal (paragraphs 4.030 and 4.040 of the DEIS).

Comment PM-10

Where is the pressure coming from to drill for gas in Lake Erie?

PM-10

Neither the Corps nor the USEPA have received any pressure from groups, organizations, industries, governmental officials or agencies, or any other parties to drill for gas in Lake Erie. The Corps has no intention of drilling for gas development, when the three states lifted their bans on gas development in the lake or let the bans expire, it became evident to the Corps and USEPA that a determination on the federal level concerning environmental acceptability of drilling and gas development in Lake Erie would proceed with leasing and operations would apply for federal permits.

Comment PM-11

"In the case of a pipeline break, di- or tri-ethylene glycol may appear at potable water intakes at concentrations up to 1 mg/L. There are no drinking water standards for polymeric ethylene glycols. However, ambient level water quality goals for ethylene glycol have been set at 140 µg/L. Because the toxicity of glycol is not understood, the Corps cannot make a determination of glycol at potable water treatment plants as a potential threat to the consumer" (Draft EIS paragraph 5.030).

In case the risk was not noted, it should be apparent that the difference between the 1.0 and the 140 is large and that the 1.0 is insignificant.

However, there is a difference between mg and µg. This sentence should be phrased to point out that 1000 µg/L may show up at a water intake and the present quality goal is only 140 µg/L.

PM-11

This comment correctly points out that the worst-case level of one milligram per liter (1 mg/L) is a very high concentration. However, the Corps was not making the one-thousand micrograms per liter (1000 µg/L). There was no intention of giving the impression in the DEIS that 1 µg/L should be considered significantly lower than the cited standard. However, as indicated in paragraph 5.030, there is no standard for polymeric glycols. The Corps cannot make a determination of glycol at potable water treatment plants as a potential threat to the consumer. The final EIS has been rewritten to reflect the fact that 1 µg/L is equivalent to 1000 µg/L. Also, refer to Topical Response Number 8 on Glycol Chlorination.

ERRATA AND ADDENDA

Paragraph S.007 (DEC-18)

In the last sentence, replace the word "structural" with the word "stratigraphic" and correct the spelling of the word "percentage." Should read: "Lockport reefs--which are localized, stratigraphic gas traps--will yield an even greater percentage of productive wells than stratigraphic Clinton-Medina sandstones."

New paragraph 1.015a (FERC-4)

The Federal Energy Regulatory Commission (FERC) is primarily responsible for administering and enforcing compliance with the Natural Gas Policy Act (NGPA) (92 Stat. 3350). The NGPA establishes a series of statutory maximum lawful prices for various categories of natural gas, including gas destined for both the intrastate and interstate markets. Under the NGPA, if the gas involved is located on lands subject to state jurisdiction, determinations of eligibility are made by the appropriate state agency regulating gas production; if the gas is located on lands under federal domain, a federal agency makes the determination. Determinations of NGPA eligibility are subject to FERC review. In addition, all interstate natural gas is subject to FERC jurisdiction. The Natural Gas Policy Act and the National Environmental Policy Act grant authority or require that FERC investigate the environmental effects of a proposed gas transportation project, as well as the potential gas reserves, the need for this gas, and the availability of capital to develop this resource.

Paragraph 1.034 (DER-33)

The second sentence should read: "... the Clinton-Medina sandstones form an extensive deposit ... and will likely produce gas throughout its extent where conditions are favorable. The favorable conditions include a low-permeability caprock overlying relatively high-porosity zones." The third sentence (now fourth) is correct.

Paragraph 1.046 (DEC-18)

In the last sentence, replace the word "structural" with the word "stratigraphic". Should read: "Since Lockport reefs are localized stratigraphic gas traps, once located and drilled, they will yield an even greater percentage of productive wells than stratigraphic Clinton-Medina reservoirs."

Paragraph 1.071 (EPA-10)

Insert after the third sentence: "The Corps notifies the USEPA by public notice of those permit activities requiring a Water Quality Certification. Where a discharge from one state may affect the water quality of another state, the Administrator of USEPA must notify the affected state. The state that may be affected by the proposed discharge then has the opportunity to comment on the 401 certification."

Paragraph 1.094

In the last sentence, change "BOP equipment" to "blowout prevention (BOP) equipment".

Paragraph 1.100 (HHS-2)

Add at end of paragraph: "Local building codes and zoning should be modified so placement of flowlines and gas facilities can be done not only to minimize land-use and water quality impacts and to be esthetic, but also to minimize loss of life in case of accident such as the explosion discussed in paragraph 4.129."

Paragraph 3.052 (DEC-49)

Add at end of paragraph: "The continuation and improvement of recreational use of Lake Erie is stressed in proposed Coastal Zone Management (CZM) plans of New York and Ohio and the approved CZM plan of Pennsylvania. The objectives of these plans for recreational use can be generalized as follows: to increase and prioritize water-related recreational facilities (marinas, harbors of refuge, launching areas, etc.), to improve public access to the Lake for recreation, to increase recreational areas in urban areas, to acquire and/or encourage purchase of land near the Lake for recreational use, to prevent or discourage incompatible development on lands near recreational areas, to improve recreational opportunities through fish and wildlife management, and to encourage recreation as a multiple use in public facilities and waterfront development."

Paragraph 3.054 (CSS-15)

In the second sentence, change "pawfish" to "panfish".

Paragraph 3.057 (DOI-17; MNF-1)

Delete last sentence of paragraph: "In Pennsylvania, it is doubtful that commercial fishing still takes place."

Paragraph 3.085 (DOI-21)

Delete the word "only" from the second sentence. Should read: "The open water of Lake Erie and Erie Bay are used by waterfowl, both during migration and over winter."

Paragraph 4.020

In line 13, insert "(0.78 in./s)" after "2 cm/s". In line 14, insert "(21.7 in./s)" after "55 cm/s".

Paragraph 4.067 (EPA-7)

Should read: "The likelihood of a gas well or pipeline being snagged and broken appears moderate. Any applicant should be required to develop contingencies to prevent such accidents from occurring and to minimize the impacts, if they do occur. Wells ..." (remainder of paragraph, as is).

Paragraph 4.113

In line 7, insert "(3281 ft)" after "1000 m".

Paragraph 4.114

In line 10, insert "(220 lb)" after "100 kg".

Paragraph 4.116

In line 6, insert "(328 ft)" after "100 m".

Paragraph 4.121

In the fourth sentence, insert "(3281 ft)" after "1000 m" and "(65.6 ft)" after "20 m".

Paragraph 4.129

In line 12, insert "(2297 ft)" after "700 m". In line 13, insert "(49.2 ft)" after "15 m". In line 18, insert "(1640 ft)" after "500 m".

Paragraph 4.213 (DEC-63)

In the last sentence, change "will be lower" to "could be lower" and "will contaminate" to "would contaminate". Should read: "Long-term maintenance costs could be lower, and fewer herbicides would contaminate land and water."

Paragraph D.011 (DEC-65)

Insert as first bulleted regulation:

- New York Water Quality Standards, NYCRR Title 6, Chapter 10, §§700-704.

Paragraph D.040 (Topical Response Number 8; EPA-8)

Add the following two items:

- Accident contingency plans must be developed and include: notification procedures to water supply operators, precautionary steps, and emergency response procedures to be used in the event of a pipeline break resulting in release of polyethylene glycol to the Lake. The plan must specify the timing between the accident event and the initiation of notification procedures.
- State-of-the-art detection and alarm systems must be used at processing plants to continuously monitor for underwater pipeline breaks.

Paragraph D.041 (HHS-2)

Add the following item:

- Local building codes and zoning should be modified so placement of flowlines and gas facilities can be done not only to minimize land-use and water quality impacts and to be esthetic, but also to minimize loss of life in case of accident such as the explosion discussed in paragraph 4.129.

Table 1-2 (DEC-18)

Replace the second entry "Structural trap" with the entry "Stratigraphic trap".

Table 1-5, Table 1-6, and Table Index (DER-35)

Table 1-5 and the Table Index should be titled "Estimated Production of Gas per Average Well from Clinton-Medina Sandstones". Table 1-6 and the Table Index should be titled "Estimated Production of Gas per Average Well from Lockport Reefs" (corrections underlined).

Table 1-34, Footnote (DEC-37)

Add superscript (b) to "Locational Constraints" heading. Add footnote:

- ^bIn some instances, it would not be possible to avoid all areas listed in the locational constraint column and, on a site-specific basis, the placement of structures in these areas would be analyzed to determine the significance of the effect and to ensure that proper mitigation is implemented. The review would include the opportunity for public comment.

Table 3-9 (DEC-51)

Replace Table 3-9 in the DEIS with the new Table 3-9 on the following page of this Final EIS. The new table restates the National Ambient Air Quality standards and gives concentrations of gaseous pollutants in both micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and parts per million (ppm). Note that there is a secondary standard for the geometric annual mean concentration of suspended particulates. With the exception of lead, the short-term standards indicated in the table may be exceeded once per year.

Table A.1 (DEC-64)

Change Item 50 to Item 50a and add Item 50b. Item 50b should read: "Emergency plans are also required under Part 255 of the New York State Public Service Commission's Rules on Gas Safety."

Table 3-9. National Ambient Air Quality Standards^a
(concentrations at 25°C, 760 mm pressure)

Pollutant	Annual Mean		Short-Term Means ^b		Averaging Time
	(µg/m ³)	(ppm)	(µg/m ³)	(ppm)	
PRIMARY STANDARDS					
Sulfur oxides (measured as SO ₂)	80	0.03	365	0.14	24 hours
Suspended particulates	75 ^c	-	260	-	24 hours
Carbon monoxide	-	-	10,000	9	8 hours
Carbon monoxide	-	-	40,000	35	1 hour
Ozone	-	-	235	0.12	1 hour
Hydrocarbons	-	-	160	0.24	3 hours (6-9 a.m.)
Nitrogen dioxide	100	0.05	-	-	-
Lead	-	-	1.5 ^d	-	Calendar quarter
SECONDARY STANDARDS					
Sulfur oxides (measured as SO ₂)	-	-	1,300	0.5	3 hours
Suspended particulates	60 ^c	-	150	-	24 hours
Carbon monoxide	-	-	Same as primary		
Ozone	-	-	Same as primary		
Hydrocarbons	-	-	Same as primary		
Nitrogen dioxide	Same as primary		-	-	-
Lead	-	-	Same as primary		

^aSource: 40 CFR 50.

^bShort-term means, except for lead, may be exceeded once per year.

^cAnnual geometric mean.

^dMaximum arithmetic mean averaged over a calendar quarter.

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